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ABSTRACT

This study describes the current status and professional development of a sample of women doctorates and compares them to a sample of men who have attained the same educational status. Chapters cover the sample and procedures used; employment patterns; doctorates in academe; publications, income, and job satisfaction; marriage and family life; graduate school experiences and reactions; attitudes towards women's rights; and summary discussion and implications. Statistical data are presented. (MJM)

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WOMEN, MEN and the DOCTORATE

John A. Centra

With the assistance of Nancy M. Kuykendall

Educational Testing Service Princeton, New Jersey

September 1974

Sponsored by the Graduate Record Examinations Board.

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John A. Centra

Chapter 1

Introduction

Fewer than 1000 doctorates were awarded annually at the close of World War I, but by 1970 the number was nearly 30,000, with two-thirds of the growth taking place during the 1960s. During this 50-year span, the proportion of doctorates awarded to women has generally fluctuated between 10 to 15 percent. In other words, approximately one out of eight Ph.D or Ed.D. degrees has been awarded to a women. By contrast, the proportion of bachelor's degrees received by women is now well over 40 percent annually. It is, therefore, largely at the advanced degree level that women remain most drastically underrepresented.[1]

Why have there been so few women doctorates? The reasons are not difficult to discover: parental pressures, early school influences, and cultural expectations have generally shaped women's career interests and aspirations in less scholarly directions. Undergraduate study, as Cross (1974) points out, is more in line with the traditional role envisioned for women:

> Graduate study is considered a commitment to a professional career, and hence the use made of the education becomes an issue. If a woman fails to use her undergraduate education in a career, one argument runs, she uses it, perhaps equally well, in raising her family, preserving the cultural heritage, contributing to her community, and furnishing appropriate companionship for her college-educated husband. The case for liberal arts education for women has frequently been made on these grounds, although some of the career curricula most attractive to undergraduate women--nursing, elementary education, and home economics--are

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[1]There figures are based on various reports by the National Research Council, The American Council on Education and the U. S. Office of Education.

> also considered highly appropriate for futures as homemakers and mothers. Their dual usefulness helps make them popular. But few would maintain that a master's degree in any field is necessary or even desirable for women who expect to live out their lives as wives and mothers, and many people would argue that a Ph.D. is a downright disadvantage. Thus graduate education for women is more controversial than college education. It is also much more difficult because the woman who embarks on this path runs into the barriers erected by the broader society as well as those erected by graduate and professional schools.

Women who persist into and through graduate school have, therefore, not only overcome a number of psychological, societal and other barriers, but can expect to encounter even more of them after receiving their degrees.

The major purpose of this study is to describe the current status and professional development of a sample of women doctorates and to compare them to a sample of men who have attained the same educational status. To what extent and in what ways have women used their Ph.D. or Ed.D. training? How do they compare to men in income, productivity and career satisfaction? What kinds of employment barriers and domestic handicaps have they faced? In view of the national concern for equal opportunity and maximum use of talent, these are significant questions.

In this study comparisons will be made between women and men matched by field of study, institution of degree, and year of graduation. By including women and men who received their doctorate during the past 23 years, it is possible to explore trends in their experiences. Sex differences will also be analyzed and discussed for five subject fields: humanities, social sciences, biological sciences, physical sciences, and education.

While the major purpose of the study is to compare responses of women doctorates with a matched sample of men, considerable attention is also

given to career patterns and the views of all doctorates when they vary by length of experience and field of study.

Past Research

There have been a number of studies of women with doctorates, but most of them focused on graduates from a single discipline, a single institution or from only one period of time. Several of the studies did not include a matched sample of men with doctorates.

Helen Astin (1969) surveyed almost 2000 women who had obtained a doctorate in 1957 or 1958. At the time of the survey, those in the sample had been out of graduate school for seven or eight years. Her questionnaire dealt largely with family background, occupational information, and current activities; the study portrays both the personal and professional lives of women doctorates in America. However, she could not make comparisons with a sample of men since they were not included in the study, and the study could not investigate changes over time.

Studies by Simon, Clark & Galway (1967) and Bernard (1964) have been quoted frequently, but some of their conclusions appear questionable. Simon, Clark, and Galway, who included a sample of men in their survey of doctorates from 1958 through 1963, reported "relatively small" sex differences in such areas as salary, rank and publications. These findings do not agree with those from several recent studies, suggesting that their 60 percent response rate may represent a biased portion of their sample. Jessie Bernard's (1964) Academic Women is a compilation of studies of women in colleges and universities. On the basis of the studies presented, Bernard argued that although there may be individual cases of discrimination, it did not exist on a mass

scale. That conclusion has been disputed by several recent studies of women doctors in academe (e.g., Rossi and Calderwood, 1973).

Among the studies that have focused on a single discipline are Bryan and Boring's (1947) survey of Ph.D.'s in psychology from 1920 to 1940; Rossi's (1970) study of sociologists; and Kashket, Robbins, Leive, and Huang's (1974) study of microbiologists. Several of the professional associations have also undertaken studies of the status of women.[2]

Other studies with small or limited samples include Mitchell's (1968) survey of women with doctorates from Oklahoma universities, and Henderson's (1967) analysis of Woodrow Wilson Fellows in 1958 and 1959. Moreover, many college and university reports aimed at determining the status of women on their own campus began to appear a few years ago (see Robinson, 1969, for a review of these studies).

Large scale surveys of college and university faculties have recently been published by the American Council on Education (Bayer, 1970; 1973). Statistical descriptions of professionals employed in academe, both with and without doctorates, are provided in these reports. Further analyses of these data, the collection of which was sponsored by the Carnegie Commission on Higher Education, have been reported elsewhere (e.g., Feldman, 1974; Astin and Bayer, 1972).

Overview

Some of the more specific objectives of this study and the questions being investigated within each chapter follow.

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[2]For example, "Women in Political Science: Studies and Reports of the APSA Committee on the Status of Women in the Profession," 1969-1971 (1971).

In Chapter 2 a description is presented of the sample, the questionnaire, and the procedures used in this study. Chapter 3 centers on a discussion of employment patterns, the major question being: To what extent are women with doctorates employed professionally and how do their positions compare to those held by men with doctorates? Reasons for unemployment are discussed, and the activities of women and men employed full time are analyzed. Because most Ph.D.'s and Ed.D.'s work in academe, a closer look at men and women employed in colleges and universities is presented in Chapter 4. Included are a discussion of rank, promotion rates, interests in teaching vs. research, and changes in employment settings over time.

Chapter 5 looks at publication rates and the annual income of men and women doctors, focusing in particular on comparisons between those with equal career lengths in similar employment settings. Chapter 5 also discusses those aspects of a job and career that have been most satisfying to individuals with a doctorate, and attempts to answer the question: Do women view job satisfaction differently from men?

Because the professional careers of women are frequently interwoven with their roles as wives and mothers, Chapter 6 examines some marital and family life conditions of women and men with doctorates, and the effects of marriage on career progress. Graduate school experiences and reactions in retrospect are presented in Chapter 7. The chapter deals specifically with sources of financial support during graduate school, interaction with graduate school faculty, and the respondents' views of current problems in graduate education. In Chapter 8, men and women are compared on their attitudes toward women's rights. Selected characteristics of women and men actively involved

in increasing women's rights are identified and discussed, along with the trends in attitudes as suggested by the views of early and recent graduates.

The final chapter summarizes the major results of the study, including a discussion of implications of the findings.

Among the appendices is Nancy Kuykendall's summary of comments made by approximately 600 of the respondents (Appendix C). Many of the comments have also been incorporated in the discussion of questionnaire responses.

Chapter 2

The Sample and Procedures Used

The sample consisted of doctoral recipients from three time periods: 1950, 1960, and 1968. Their names were selected at random from American Doctoral Dissertations, (University Microfilms, Ann Arbor, Michigan) a directory that lists doctoral recipients by year of degree, field of study, and institution. For the women doctorates selected, a sample of men matched on year, field, and institution was chosen.

As indicated in Table 2.1, an annual average of approximately 700 women had earned a doctorate in the early 1950's, but by 1968-69 the number had grown to 3,436 for a single year. The percentage of doctorates awarded to women had also increased from 9.3 percent to 13.1 percent during this same period. Because of the small number of women doctorates in 1950, graduates from 1951 were also included in this early time period (there were 658 in 1950 and 678 in 1951).[1] Also, in view of the large number of women graduates in 1968, only a portion of the graduates were selected from that single, later year.

The Selection of Respondents

The original numbers selected from each year, field, and sex are listed in Table 2.2. As can be noted in the table, more women than men were selected because it was expected that fewer current addresses would be available for women, particularly for the earlier graduates. This was indeed

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[1] For ease in reporting, this early group will simply be referred to as the 1950 graduates.

Table 2.1

Number of Earned Doctorates by Sex in the United States, 1950-1969[1]

Year	Women	Men	Percent of total who are women
1950-1954[2]	728	7,064	9.3
1955-1959[2]	921	8,039	10.3
1963-1964	1,535	12,955	10.6
1965-1966	2,118	16,121	11.6
1966-1967	2,456	18,164	11.9
1967-1968	2,906	20,185	12.6
1968-1969	3,436	22,753	13.1

[1]Sources: W.C. Ells "Earned Doctorates in American Institutions of Higher Education" 1861-1955, Vol. XII, 1956, USOE. Also: U. S. Dep't. of Health, Education and Welfare, USOE "Summary of Earned Degrees Conferred," for the 1963-64 and 1968-69 years.

[2]Figures are annual averages for the four year periods.

Table 2.2

Number Sampled Originally and Final Returns,
By Field and Approximate Year of Degree

Field of Degree	1950				1960				1968			
	Original Number Selected[1]		Final Number[2]		Original Number Selected		Final Number[2]		Original Number Selected		Final Number[2]	
	W	M	W	M	W	M	W	M	W	M	W	M
HUMANITIES												
Fine Arts, Architecture, Archeology, Art	19	11	13	5	10	9	4	5	8	8	3	3
Language & Literature, Linguistics, Folklore	187	163	79	78	133	127	61	73	146	146	78	88
Music	5	4	1	4	18	18	13	12	0	0	0	0
Philosophy	23	21	10	10	24	23	11	11	9	9	4	6
Religion	8	7	4	6	10	9	6	6	4	4	3	3
Speech Theatre, Theatre	2	2	2	2	27	27	14	20	4	4	4	3
Humanities Totals	244	208	109	105	222	213	109	127	173	173	92	103
SOCIAL SCIENCES												
Anthropology	16	16	8	5	9	9	4	3	31	31	12	15
Biopsychology	0	0	0	0	0	0	0	0	1	1	0	1
Economics, Bus. Adm., Agr. Economics	46	46	19	28	17	17	12	13	29	27	16	14
Geography	6	5	3	2	5	5	3	5	1	1	0	1
History	43	42	23	23	31	28	21	9	28	28	21	19
Law (or law related)	3	3	2	0	0	0	0	0	1	1	0	0
Political Science	31	30	11	17	16	16	9	9	15	15	7	11
Psychology	135	130	62	71	110	105	56	52	95	95	49	49
Sociology, Social Work	41	39	19	24	31	25	15	13	27	27	16	14
Social Sciences Totals	321	311	147	170	219	205	120	104	228	226	121	124

[1]Number of names selected from the directory of American Doctoral Dissertations (University Microfilms, Ann Arbor, Mich.).

[2]Number of usable questionnaires received.

Table 2.2 (cont'd.)

Field of Degree	1950 Original Number Selected		1950 Final Number		1960 Original Number Selected		1960 Final Number		1968 Original Number Selected		1968 Final Number	
	W	M	W	M	W	M	W	M	W	M	W	M
BIOLOGICAL SCIENCES												
Anatomy	13	8	8	5	5	4	3	2	11	10	7	4
Bacteriology, Microbiology	46	43	24	29	14	11	7	9	24	23	17	11
Biology, Biochemistry, Biophysics	77	73	32	41	34	32	21	18	116	102	63	65
Botany	27	24	8	9	0	0	0	0	21	18	8	11
Entomology	2	1	0	1	0	0	0	0	3	2	2	0
Genetics	13	6	5	5	0	0	0	0	19	13	12	7
Health Sciences, Nursing	28	26	9	18	20	15	11	7	18	16	9	10
Pharmacology	6	5	2	2	0	0	0	0	4	4	3	2
Physiology	27	24	14	14	6	6	4	3	12	12	9	5
Zoology	40	32	18	20	24	21	7	8	14	14	12	8
Biological Sciences Totals	279	242	120	144	103	89	53	47	242	214	142	123
PHYSICAL SCIENCES												
Astronomy, Astrophysics	2	2	1	1	0	0	0	0	7	7	5	7
Chemistry	85	85	37	61	60	57	28	32	107	103	62	57
Engineering	4	4	1	3	2	2	2	2	3	3	2	2
Geology	4	6	2	2	2	2	1	2	3	3	2	2
Mathematics	17	17	11	7	15	15	6	6	13	13	5	6
Minerology, Meteorology	0	0	0	0	3	3	1	1	8	8	6	6
Paleontology, Oceanography	3	1	1	1	2	1	2	1	1	1	1	0
Physics	19	19	8	9	3	3	2	3	5	5	4	3
Physical Sciences Totals	134	134	61	84	87	83	42	47	148	144	87	83
EDUCATION AND APPLIED AREAS												
Accounting	1	0	1	0	0	0	0	0	4	3	1	2
Agriculture	1	1	0	0	6	6	1	6	3	3	1	4
Education	328	324	153	180	271	258	147	143	380	356	224	243
Home Economics, Food Technology	7	1	7	1	25	5	17	4	10	1	7	1
Library Science	1	1	0	1	2	2	2	2	4	4	4	3
Speech	20	20	14	13	0	0	0	0	10	10	6	6
Education and Applied Areas Totals	358	347	175	195	304	271	167	155	411	377	243	259
Overall Totals	1336	1242	612	698	935	861	491	480	1202	1134	685	692

the case. A total of 6,710 names comprised the original sample, including 1,336 women and 1,242 men from the 1950 time period; 935 women and 861 men from 1960; and 1,202 women and 1,134 men from 1968.

To obtain addresses for the original sample, the deans of the graduate schools of the institutions represented in the sample were sent an alphabetized list of the graduates selected from their institution with the field of study and year of degree of each recipient. The graduate deans were asked to forward the list of names along with a cover letter explaining the purposes of the study to the alumni director, or to whoever might be able to furnish addresses. Just under 150 institutions, including every major doctoral granting institution except one provided addresses for the study.[2]

The Final Sample

Addresses were available for 5,331 (79%) of the original sample of 6,710, as summarized in Table 2.3. In addition to those for whom addresses were not available, the 1,379 included those with foreign addresses, who were excluded from the survey. The group of 5,331 was sent a questionnaire and cover letter explaining the general objectives of the study in mid-March, 1973. A second letter and questionnaire were sent to non-respondents a month and a half later.[3]

As indicated in Table 2.3, 836 questionnaires were returned undelivered. These were largely due to out-of-date addresses and lack of a forwarding

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[2]The one university that could not provide addresses said that no single office on campus kept a file of graduates or their addresses.

[3]Copies of these letters as well as other form letters used in the study may be found in Appendix A.

Table 2.3

The Sample

Sample selected originally[1]	6710
No addresses available from institutions, or deceased	1379
Addresses received from institutions, questionnaire mailed	5331
Incorrect addresses, questionnaire returned undelivered[2]	836
Questionnaires presumed delivered	4495
Questionnaires returned	3658
Percentage returned of those delivered	81.4

[1]From the directory of American Doctoral Dissertations (University Microfilms, Ann Arbor, Mich.).

[2]While the majority of these were people for whom recent addresses were not available, some were deceased and a few (approximately a dozen) indicated that they had not received a doctorate.

address. Therefore, 4,495 questionnaires were presumed delivered and of these 3,658 or 81.4 percent were returned. Referring to Table 2.2, it can be noted that the final numbers of men and women respondents are fairly similar for each year and major field group. For example, there were 685 women and 692 men from all fields in 1968, and 121 women and 124 men from the social sciences in that same year. The sample for the physical sciences, as Table 2.2 clearly indicates, consists largely of chemistry graduates because the vast majority of women in the physical sciences received their degrees in chemistry. Actually the physical sciences is a general area in which women are least likely to have earned a doctorate (see Table 2.4), although it is also an area in which one out of three men (in 1968-69) had earned their doctorate. In view of this, it should be kept in mind that the male samples in each broad area, for example the physical sciences, reflect the specific subject fields in which women have graduated, such as chemistry, rather than the proportion of male graduates in the area. The latter would require a more extensive sampling of men in such fields as physics, geology, and mathematics.

A few additional points might be made regarding the field and year breakdown of the sample (Table 2.2). The "education and applied areas" group consists largely of graduates in education since there were few males with home economics doctorates or women with doctorates in agriculture (particularly in the earlier time periods). Moreover, for some fields and years, such as botany and genetics in 1960, graduates were inadvertently omitted from the sample. It is unlikely, however, that this has affected greatly the subsequent analyses or conclusions from the study.

Table 2.4

Doctorate Degrees Conferred in the United States in 1968-69, by Field of Study[1]

Field of Study	Women	Men	Percentage of total who were women
Biological Sciences	469	2582	15.3
Education	970	3859	20.0
Humanities	794	2464	24.4
Physical Sciences (Including Mathematics and Engineering)	286	8047	3.4
Social Sciences (Including Psychology)	757	3944	16.1
Totals	3276	20896	13.6
Miscellaneous fields not listed above	160	1857	7.9
Total Degrees Conferred	3436	22753	13.1

[1]Source: U. S. Dep't of Health, Education and Welfare, USOE "Summary of Earned Degrees Conferred, 1968-69"

The Follow-up of Nonrespondents

While the response rate (81 percent of those who presumably received the questionnaire) was excellent for a mail survey, a random sample of female nonrespondents was selected to receive a brief postcard questionnaire. The postcard included queries about current employment status, the extent of employment since obtaining the doctorate, and whether the individual had received the full questionnaire (see Appendix A). It was expected that respondents to the full questionnaire were more likely to be employed, or to be women who had been employed a great deal of the time since receiving the doctorate. In addition to checking on this aspect of response bias, the purpose of the follow-up was to ascertain whether female nonrespondents had actually received the full questionnaire.

Using a table of random numbers, 50 women were randomly sampled from a list of 495 female nonrespondents (59 percent of the nonrespondents were women). The 495 consisted of 191 from the 1950 time period, 137 from 1960, and 167 from the year 1968. The 50 were selected to reflect these proportions.

Results of the postcard questionnaire were as follows:

19 postcards were returned completed

3 letters were returned, addressee unknown

1 was deceased

1 of the 50 was a man (with Merle as a first name)

An attempt was made to contact the remaining 26 by phone. Nine of these were not located at the address available. Thus these nine plus the three letters returned made a total of 12, or approximately one-fourth of the nonrespondent sample, that likely did not receive any of the questionnaires.

Eight of the 26 could not be reached but were at the address (most were away at the time--late June); and nine were located and briefly interviewed over the phone.

For the 28 women for whom employment information was obtained (either by the postcard questionnaire or by phone), eight were currently unemployed. This 29 percent unemployment rate was higher than the 11 percent unemployment rate for women respondents (see Chapter 3), suggesting that employed women were more likely to have sent back the full questionnaire. Similarly, Astin (1969) reported that the unemployment rate for her follow-up sample of nonrespondents was twice as high as among questionnaire respondents (18 vs. 9 percent). Nevertheless, the 28 women had been employed, on the average, slightly over 80 percent of the time since receiving their degrees, which is very similar to the figure computed for the respondent group.

The follow-up of nonrespondents also points out that the response rate of 81.4 percent for the full questionnaire, which was based on those presumed to have received the questionnaire, was probably a conservative estimate. Since one-fourth of the sampled nonrespondents had incorrect addresses, it is likely that fewer individuals from the total group, at least among the women, actually received the full questionnaire and that more than 81 percent of those who received it completed it.

The Questionnaire

A preliminary form of the questionnaire consisted of 41 questions covering background and marital information, factors influencing decisions to work for a doctorate, general reactions to graduate school, employment history and job satisfaction, reasons for unemployment, and professional activities. On the

basis of comments from consultants and colleagues, and with information gathered from a pretesting of the items, the preliminary form was modified to its final form. One major change was a deemphasis on early environmental influences, an area that might be better investigated with a sample of very recent doctorates or students still in graduate school (e.g., see Baird, 1974). Other changes included limiting open-ended comment questions to one item on the last page (because of the large sample and the difficulties in analyzing such data), adding a question dealing with attitudes towards women's rights and opportunities, and expanding the marriage and family life section. A second pretesting, lead to some final minor alterations. The final questionnaire was designed to be completed in the neighborhood of 20 minutes, a length of time deemed not excessive.

There were two forms of the final questionnaire, one for the 1950 and 1960 graduates and a second for the 1968 graduates (see Appendix B). The first 19 questions were identical for both forms. In addition, the 1950-1960 questionnaire included an extended "Marital and Family Life" section consisting of ten questions, while the questionnaire to the 1968 sample included a list of "possible problems related to doctoral study" (question 20) and only four items on marriage and family. The reasons for the two forms were: first, to keep the questionnaire brief but still obtain the desired information; and second, the earlier graduates (approximately 13 or 23 years after receiving their degrees) would provide less useful information on problems in graduate school, but could provide better long-term information on marriage and family life.

The questionnaires were anonymous in the sense that names were neither put on the form nor elicited. But for follow-up purposes and later analyses,

it was necessary to number code each questionnaire with an 11 digit number that provided institutional, individual, major field, year of degree, and sex identification. This was pointed out to the respondents and only a handful felt compelled to protect their identity by cutting out the code number.

The last page of the questionnaire was left blank for additional comments which respondents might wish to make. Specifically, they were informed:

> Please feel free to elaborate on any of your previous answers or to add anything else you consider important but which may have been overlooked in the questionnaire.

Method of Analysis

Questionnaire responses were keypunched on tape for analysis. Those with written comments were set aside after being keypunched and a detailed content analysis of these comments was made. Most of the analyses focused on sex differences within five areas of study: humanities, social sciences, biological sciences, physical sciences, and education. It was possible, therefore, to make comparisons between the areas of study as well as for men and women in the total group. The year of degree was another variable used in the analyses, which allowed trends or changes over time to be investigated. In addition to these classifications, various cross-tabulations using items within the questionnaire to group subjects (e.g., type of employment, years of employment, etc.) were also made. These cross-tabulations were chosen to investigate specific questions or hypotheses.

The sex of each respondent was determined by their response to the first item on the questionnaire. For the few individuals (less than one percent) who did not respond to this question, first name was used to determine sex.

To test differences between men and women, two by two chi-square tests of significance were applied to the percentage responses. The .05 and .01 levels of significance were computed and are indicated in the tables in the chapters that follow with a single or double asterisk. The discussion of the data, however, has taken into account overall patterns of differences as well as statistical differences between pairs of responses. In addition to frequency and percentage tabulations, the mean or median was computed for relevant variables, such as salary and number of publications.

Chapter 3

Employment Patterns

> Although I have not taught full time all the time since receiving my degree, this has been my choice. My degree has given me the flexibility to teach as much as I wanted. Without a degree, I would not have been able to work on my terms--which provided time for my family's needs.
>
> Is there any intrinsic reason that one should have to work, say, 60 hours a week to make a real contribution? Or is this all just part of the rat race syndrome? If so, how could it be changed?

A major reservation about accepting women into doctoral programs has been that women do not remain professionally active long enough to justify the expenditure of talent and money necessary to train them. Is this a valid reservation? To what extent are women employed professionally and how do their positions compare with those of male doctorates? Astin (1969) reported that 81 percent of her sample of 1957-58 women doctorates were employed full time seven or eight years after receiving their doctorate, and an additional 10 percent were employed part time. Simon, Clark and Galway's (1967) survey of women doctorates two to seven years after graduation indicated that 96 percent of those who were unmarried were employed full time at the time of the survey, as were 87 percent of the married group, and 59 percent of the married with children group. Both of these studies focused on employment status at a particular time, but the concern in this chapter is with employment over an extended period of time. In addition, the activities of women who were employed full time at the time of the study will be analyzed, and, in the third section of the chapter, reasons for unemployment are discussed. The chapter begins with a section on some characteristics of the sample of doctorates at the time of their degrees.

Age, Work Experience, and Extent of Employment at Receipt of the Doctorate

On the average, women are older than men who receive a doctorate in any given year; in fact, women are approximately four to five years older, generally averaging around 36 or so (Harman and Soldz, 1963). This was also the average age for the sample of women in this study. As indicated in Table 3.1, their average of 36 years of age included a high of 38 for those in education, to lower averages of 30 and 32 for those in the physical and biological sciences. Men in physical sciences also tended to be youngest at the time of the doctorate, 29. If the sample of men had been chosen to represent the proportion of male doctorates in each field, thereby reflecting the 40 percent or so who graduate annually in the physical sciences, the average age for men in the sample would not be 34, as indicated in Table 3.1, but closer to 31 or so.

The average ages, however, really don't tell the whole story. A higher percentage of women than men in all fields were under 25 when they received their doctorates, with the gap being especially notable in the humanities. Men were more likely to receive their degrees between the ages of 26 to 36, while more women received their doctorate after age 36. In fact, 43 percent of the women completed their degrees after age 37, compared to 28 percent of the men. Many of the older graduates, both men and women, were in education. The pattern for women in comparison to men, therefore, was to either go directly to graduate school after receiving their bachelor's degree, or more typically to obtain their doctorates later in life.

The average number of years between receiving the bachelor's degree and the doctoral degree was about 13 for women and just under 11 for men (Table 3.2).

Table 3.1

Age When Doctorate Was Received

Age Range	Percentage Within Each Age Range and Average Age											
	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education		All	
	W (N=310)	M (N=335)	W (388)	M (398)	W (315)	M (314)	W (190)	M (214)	W (585)	M (609)	W (N=1788)	M (N=1870)
Under 25	5.8	1.2**	7.2	4.3	9.5	7.6	16.8	14.0	1.2	.7	6.4	4.2**
26 - 30	27.7	33.7	28.4	41.0**	40.6	50.3	53.2	66.8	9.4	15.3**	26.8	35.8**
31 - 36	26.1	36.4*	22.4	31.9**	21.3	29.0*	17.9	13.1	20.2	30.7**	21.6	29.7**
37 - 42	19.4	17.6	17.3	14.3	16.8	7.3**	6.8	2.3*	28.9	29.2	20.2	17.2*
Over 43	19.0	9.6**	21.4	6.8**	8.3	2.9**	4.7	2.3	39.0	21.8**	22.7	11.0**
No response	1.9	1.5	3.4	1.8	3.5	2.9	.5	1.4	1.4	2.3	2.2	2.0
Average age (Approximate)	35	34	35	31	32	31	30	29	38	37	36	34

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

Table 3.2

Average Number of Years Between Receipt of Bachelor's and Doctoral Degrees

	Humanities		Soc. Sci.		Bio. Sci.		Phys. Sci.		Education		All	
	W	M	W	M	W	M	W	M	W	M	W (N=1740)	M (N=1829)
Years	12.9	11.3	13.0	9.9	9.9	8.1	8.2	7.0	16.6	13.8	13.1	10.8

For every field, the average for women was greater than for men, varying from the physical sciences for which the average was about 8 for women and 7 for men, to education where the length of time between degrees was close to double this amount. For the biological sciences the averages were slightly greater than in the physical sciences: about 10 years between degrees for women and 8 for men. Women in both the humanities and social sciences averaged 13 years between degrees, men about 11 and 9 years respectively. Finally, although not shown in Table 3.2, there had not been a notable decrease in length of time between degrees: graduates in 1968 averaged about the same amount of time as those in 1950.

In addition to the time spent working on a doctorate, the years between degrees could have been spent in several ways. For many women, it was a time for marriage and bearing and raising children; for men there were three wars--World War II, Korea, and Vietnam--that interrupted the progress of many. But undoubtedly most men and women spent the majority of their non-study time between degrees in professional employment, as will be clearly indicated in the next table (3.3). This is not to say, however, that these categories were mutually exclusive; many women, of course, combined family with employment or doctoral study, just as many men and women combined employment and work toward a doctorate. In fact, about half of the enrollments in graduate schools are part time (Folger, Astin, and Bayer, 1969).

Employment prior to and directly after the doctorate. The number of years employed professionally prior to receiving the doctorate are given in Table 3.3. More men than women had no predoctoral work experience, and three or four years of experience; 50 percent of the women, on the other hand, had seven or more

Table 3.3

Predoctoral Work Experience

Number of Years Employed Professionally	Percentage Indicating Each Response											
	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education		All	
	W (N=310)	M (N=335)	W (388)	M (398)	W (315)	M (314)	W (190)	M (214)	W (585)	M (609)	W (1788)	M (1870)
None	11.0	15.5	16.2	21.6	24.4	40.4**	36.8	50.0*	1.7	4.1*	14.2	21.2**
1 or 2	18.1	14.9	17.0	22.1	17.1	16.6	24.2	17.8	3.4	5.4	13.5	14.0
3 or 4	14.2	16.7	15.2	18.3	9.8	13.7	11.1	14.5	6.2	10.3*	10.7	14.2*
5 or 6	9.7	14.9	9.0	11.3	10.8	8.9	9.5	5.1	6.8	10.2	8.8	10.5
7 or more	44.2	35.5	39.2	24.1**	33.7	18.8**	16.8	11.2	80.2	67.7*	50.1	38.0**
No response	2.9	2.4	3.4	2.5	4.1	1.6	1.6	1.4	1.7	2.3	2.7	2.1

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

years of professional employment, with 80 percent of those in education in that category. With the exception of graduates in the physical and biological sciences, then, over three-fourths of the men and women were employed professionally for one or more years prior to award of the doctorate. After the degree was awarded, many of these individuals--49 percent of the men and 41 percent of the women--continued in the full-time positions they held while completing their studies (see Table 3.4). Many, quite likely, were employed at colleges or universities where tenure or promotions depended upon the award of the doctorate. Men in the humanities, social sciences and physical sciences were more likely than women to hold positions prior to the degree that were appropriate for continuation after the degree was granted.

As further indicated in Table 3.4, following receipt of the doctorate six percent of the women were employed part time and an equal number were not employed for one or more years. Thus 12 percent of the women (vs. less than two percent of the men) did not immediately fully use their doctoral training. Moreover, while women in education were most likely to work full time, due no doubt to their older ages when they received their degrees, women in all five fields exceeded men in part-time employment or unemployment immediately after receiving their degrees. There does, however, seem to be a trend for more women to be employed following the doctorate: only five percent of the 1968 graduates were not employed compared to 8 percent of the 1950 graduates. Reasons for periods of unemployment are discussed later in this chapter.

Table 3.4

Extent of Employment Immediately After Receiving the Doctorate

	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education		All	
	W	M	W	M	W	M	W	M	W	M	W	M
	(N=310)	(N=335)	(388)	(398)	(315)	(314)	(190)	(214)	(585)	(609)	(1788)	(1870)
Were you employed immediately after receiving the doctorate?												
Yes, continued in full-time position I had while working on degree	41.6	58.5**	42.5	55.0**	25.1	26.8	13.7	24.3*	56.4	58.5	40.8	48.5**
Yes, other full-time (includes postdoctoral fellowship)	40.6	37.6	36.1	39.4	60.0	70.1	71.6	72.4	34.5	39.2	44.4	48.0
Yes, part-time	6.1	.9**	9.0	1.8**	5.1	1.0**	7.4	0**	4.1	.3**	6.0	.8**
No, not for one or more years	7.1	1.2**	8.8	1.8**	5.7	.6**	5.8	.5**	2.9	.2*	5.7	.8**
No response (or never employed since receiving the doctorate)	4.5	1.8	3.6	2.0	4.1	1.6	1.6	2.8	2.1	1.8	3.1	1.9

* $p<.05$ Chi-square tests of significance of percentage differences between sexes

** $p<.01$ Chi-square tests of significance of percentage differences between sexes

Some Highlights of Age and Employment at Receipt of the Doctorate

Age at Completing Doctorate

The highest average age for both men and women was in the field of education; the lowest average age was in the physical sciences.

Forty-three percent of the women and 37 percent of the men completed the doctorate after the age of 37.

The average number of years for women between the B.A. and doctorate was 13, while for men it was 11.

There has been no notable decrease in the length of time between degrees: graduates in 1968 averaged about the same number of years as graduates in 1950.

Employment

Over three-fourths of the men and women were employed professionally for one or more years prior to award of the doctorate.

Education was the field in which there was the most predoctoral work experience for both women and men: 80 percent of the women and 68 percent of the men worked seven years or more.

Forty-nine percent of the men and 41 percent of the women continued in the full-time positions they held while studying for the doctorate.

Women in all fields exceeded men in part-time employment or unemployment immediately after receiving their degree.

In 1950, the percentage of unemployed women graduates was 8; in 1968, it was 5 percent.

Extent of Employment

To investigate how time was spent since obtaining the doctorate, the number of years in full-time employment, part-time employment, postdoctoral study, no employment (included unemployment, housewife, leave of absence), and retirement were obtained from each respondent. On the basis of the total

number of years available for each graduate, most of whom would have had 5, 13, or 23 years in all, an average percentage was computed for each of the five categories for men and women. Circle graphs of the average percentages are presented in Figure 3.1.

Women were employed full time an average of 78 percent of the time, compared to 95 percent for men. However, women were employed part time for nine percent of the time versus only one percent for men. Women, not surprisingly, also exceeded men in the percent of time spent not employed: 7.5 vs. 4 percent. There was little difference between the two groups in time spent on postdoctoral study, but women had been retired a greater proportion of the time (2.2 percent vs. .8 percent for men). This higher retirement figure for women is mainly due to the fact that women received their doctorates at a later age and therefore had fewer years of potential employment.

Differences by field of study. As noted in Table 3.5, differences between women and men within each of the five fields are significant for time spent in full- or part-time employment, or in no employment. Only in education, where women had been employed full time an average of 92 percent of the time, was the difference slight. The high percentage of full-time employment for women doctorates in education is largely attributed to their older ages when obtaining their degrees, later years being when they would be most free from familial interruptions. In addition since 80 percent of this group had seven or more years of predoctoral work experience, they had extensive prior experience to draw on for employment. At the other extreme, women in the physical sciences were employed full time only 70 percent of

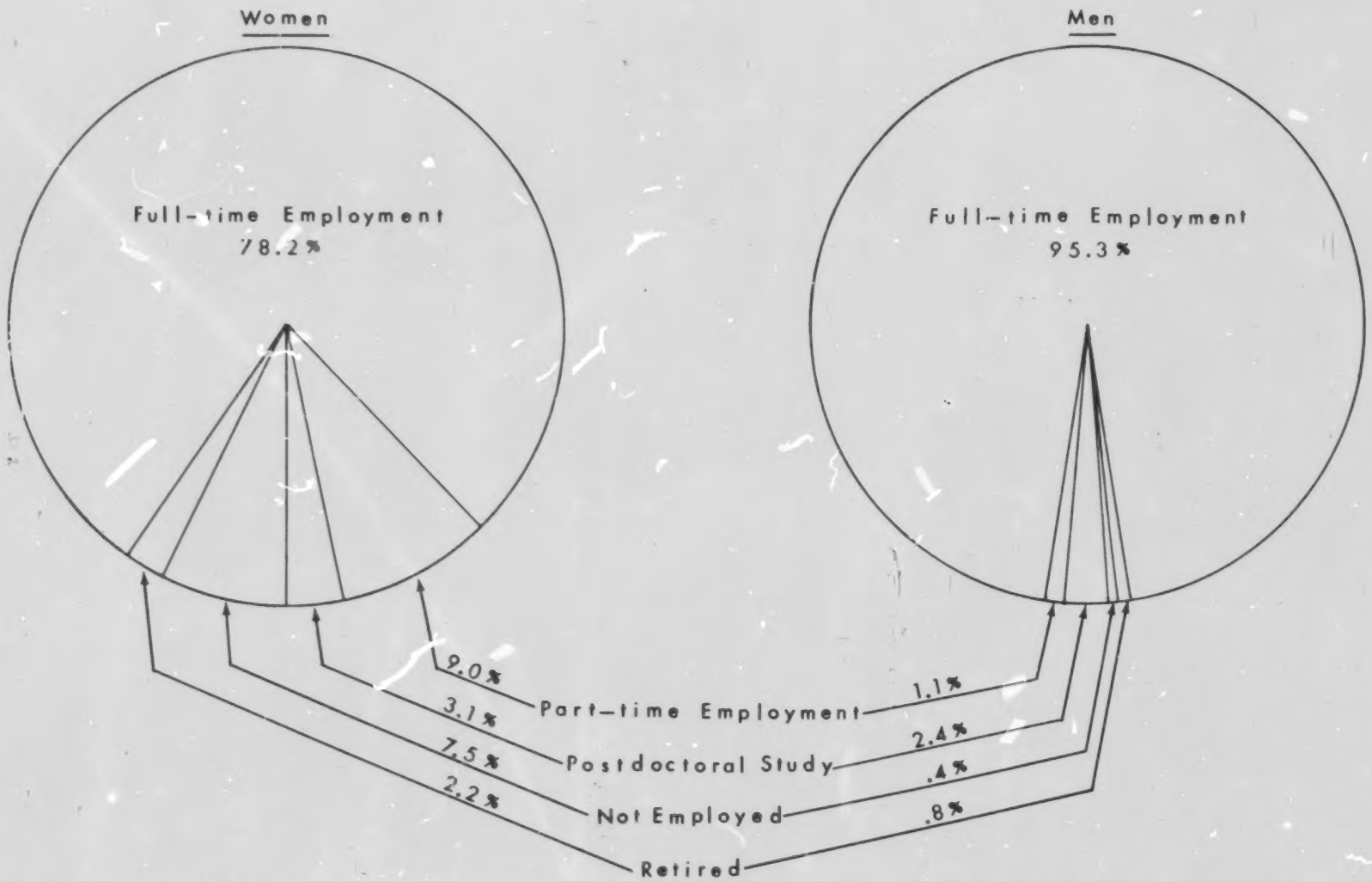

Fig. 3.1 How Time Was Spent Since Obtaining the Doctorate

Table 3.5

Percentage of Time in Full-Time Employment,

Part-Time Employment and Unemployment[1]

Employment Status	Percentages by Field of Doctorate									
	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education	
	W (N=300)	M (N=327)	W (372)	M (390)	W (300)	M (309)	W (187)	M (211)	W (576)	M (598)
Full-time[2]	84.6	98.8*	77.5	97.3**	81.6	99.0*	70.0	98.6**	91.8	98.8
Part-time	7.9	.8**	14.3	2.3**	8.0	.8**	14.8	.3**	4.9	1.0**
Unemployed	7.5	.4**	8.2	.4**	10.4	.2**	15.2	1.1**	3.3	.2**

[1]Based on total number of years since receiving the doctorate with retirement excluded.

[2]Includes time in postdoctoral study.

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

the time, dividing the remaining 30 percent between part time and no employment. Women in the physical sciences, it will be recalled (Table 3.1), also tended to obtain their doctorate at an earlier age, when many would have had child bearing years ahead of them. Age and family obligations alone, however, may not totally explain these differences as data later in the study suggest.

Extent of full-time employment. Another way of looking at employment patterns is to note the number of women and men who, with the exception of postdoctoral study or sabbatical time, worked full time from doctoral degree to the date of the survey or prior to retirement. That is, rather than taking the percent of total years available, as in the previous section, how many men and women have worked full time continuously and without interruption since receiving their doctoral degrees? About two-thirds of the women and well over 90 percent of the men were in this category. For women, the percentages varied from 60 percent for the 1950 graduates for whom there was most time for interruptions, to 65 percent of the 1960 graduates and 69 percent of the 1968 doctorates.

Current and preferred employment. As indicated in Table 3.6, at the time of the survey 75 percent of the women were employed full time, and an additional 10 percent were employed part time (6 percent over half time). Eleven percent were not employed. By comparison, 92 percent of the men were employed full time and less than two percent part time. Approximately 4 percent of the men were not employed. Included among the nonemployed were those on leave or retired.

Table 3.6

Current and Preferred Employment Status

Amount of Time	Percentages Responding			
	Current		Preferred	
	W (1788)	M (1870)	W (1788)	M (1870)
Full time	75.0	92.2**	61.7	75.8**
Over half time but less than full time	6.0	.9**	13.7	6.8**
Less than half time	4.3	.5**	4.4	1.5**
Not employed	11.1	3.8**	5.6	2.4**
No response	3.6	2.6	14.6	13.5

** $p<.01$ Chi-square tests of significance of percentage differences between sexes

By year of degree, 82 percent of the 1968 women graduates were employed full time, as were 80 percent of the 1960 graduates and 63 percent of the 1950 group. The part-time percentages for all three groups of women were very similar (10 percent); the not employed rate, with retirees excluded, differed slightly: 6 percent for the first two groups and 8 percent for the 1968 group.

Employment preferences. Table 3.6 also reveals that the women, as a group, preferred to be employed less than their male counterparts. But a more important question is whether the current employment status of the doctorates is what they preferred. In Table 3.7, the preferred status is presented according to the current employment status of each person. For example, 88 percent of the full-time employed women preferred that status, but 10 percent would have preferred to be employed over half time instead. Most notable are the preferences for men and women employed less than half time or not employed. Many of these individuals clearly preferred to be employed more than they were. While a majority of the men and women who were not employed preferred that status (many of whom were retired), 33 percent of the women preferred part-time employment (as did 18 percent of the men). Twenty-six percent of the not employed men would rather have been employed full time, as would 13 percent of the not employed women.

Along with the 12 percent of the women working full time who preferred to be working less, there were 9 percent of the men with similar preferences. In fact, 7 percent of the full-time employed men would choose to be working somewhat over half time instead.

Table 3.7

Current Employment
vs.
The Preferred Employment Status
of Each Person

Preferred Employment Status	Current Employment Status: Full-time W (1187)	Full-time M (1527)	Over Half-time W (101)	Over Half-time M[1] (16)	Less than Half-time W (68)	Less than Half-time M[1] (9)	Not Employed W (168)	Not Employed M (61)
Full-time	88	91	17	12	22	22	13	26*
Over half-time	10	7**	80	69	24	45	18 } 33	8 } 18
Less than half-time	1	1	3	19	54	33	15 }	10 }
Not employed	1	1	0	0	0	0	54	56

[1]The small numbers of men employed part time make comparisons with women tenuous for these categories.

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

Some of the comments by women who have been employed part time during much of their career illustrate why they preferred that arrangement:

> Although I have not taught full time all the time since receiving my degree, this has been my choice. My degree has given me the flexibility to teach as much as I wanted. Without a degree, I would not have been able to work on my terms--which provided time for my family's needs.

Another who worked 7 years full time and 14 part time said:

> I have two children. During the periods when they were young I reduced my working time, then increased it as they got older. I still prefer to work part time in order to manage family 'obligations.'

A third who had been employed part time since obtaining her doctorate said:

> My history should not be interpreted as reflecting the domination of 'male chauvinist pigs.' It was my desire to have interesting part-time work without the time consuming and energy sapping duties of more responsible positions, several of which I turned down over the years.

Finally, one woman suggested more flexible employment patterns as well as continuous training for professional women with families:

> An important aspect of improving the professional potential of women Ph.D.'s while yet allowing for a time sequence devoted to family is the development of more sophisticated programs of continuous training or part-time employment which could be integrated with family responsibilities.

Judging from the number of men who preferred to be working less than full time (9 percent), more flexible employment patterns for men might also be encouraged in the future.

What Those Employed Full Time Are Doing

How do women and men use their doctoral training? Who are their employers and how do they spend their time? A look at the employment of men and women

at the time of the survey helps to answer these questions.

As Table 3.8 indicates, most people with doctorates were employed by four-year colleges or in universities. Close to 70 percent of the women were employed at one of these two groups of institutions, which is what Astin (1969) had reported in her 1965 survey. Two-thirds of the men were employed at these types of institutions. While similar proportions of men and women were employed at doctoral granting universities (around 40 percent), more women were employed at four-year colleges that did not offer a doctoral degree (30 vs. 25 percent of the men). Women were also more likely to be employed at two-year colleges, while men were employed by private profit-making companies (8 vs. 2.5 percent) or the federal government (5.8 vs. 3.4 percent) in greater proportions. The types of employment immediately following award of the doctorate, indicated by the second set of percentages in Table 3.8, resembled current employment except that for first employment:

fewer men and women (about five percent fewer) took jobs at universities

fewer of both sexes, but women particularly, were employed at two-year colleges

fewer men were employed by private companies or had their own professional office or partnership

During the span of time covered by the study, therefore, the figures suggest some movement to universities from other types of employment, a trend that may be less pronounced in future years as universities cease to grow as rapidly as in the past. The increase in the percentage of doctorates employed at two-year colleges, on the other hand, is likely to continue as that segment of higher education expands and fewer jobs are available in other segments of postsecondary education.

Table 3.8

Current Employment and First Postdoctoral Employment,

Full-Time Employed Only

Employment	Percentage Responses: Current Employment W (N=1343)	Current Employment M (N=1724)	First Postdoctoral Employment W (N=1343)	First Postdoctoral Employment M (N=1724)
Four-year college that does not offer a doctoral degree	29.6	25.0*	29.1	25.3*
University that offers doctoral degree	39.8	41.3	34.3	36.8
Two-year college	3.5	2.3*	1.9	1.5
Elementary or secondary school or school system	5.7	4.6	6.4	6.0
My own professional office or professional partnership	1.6	2.0	.4	.4
Self-employed in business	.4	.6	.2	.2
Postdoctoral fellowship	1.0	.5	5.1	4.1
Private profit-making company	2.5	8.0**	2.5	6.3**
Nonprofit research organization or institution, not part of a university	1.9	2.3	2.2	2.1
Public or private welfare organization	.4	.4	.4	.5
Hospital or clinic	2.7	1.7	3.0	2.3
Federal government	3.4	5.8*	2.8	6.3**
State or local government	1.9	1.3	1.6	1.6
Church or religious organization	1.0	.8	1.1	.9
Other or no answer	3.3	4.4	9.0[1]	5.6**

[1] Includes those not employed at that time

* $p<.05$ Chi-square tests of significance of percentage differences between sexes

** $p<.01$ Chi-square tests of significance of percentage differences between sexes

Current employment by field. Current employment for doctorates in the five subject areas present some interesting differences between the sexes. These are presented in Table 3.9 and summarized as follows:

> Current Employment for Doctorates in Five Fields--(Table 3.9)
>
> Humanities: More men were at universities, more women at two- and four-year colleges.
>
> Social Sciences: Men and women were at universities and colleges in fairly equal proportions; more men were in private companies.
>
> Education: There were no significant differences between the sexes in any employment.
>
> Biological Sciences: More women were employed at two-year colleges; there were no large differences at four-year colleges and universities; but more men were in the federal government and in private companies.
>
> Physical Sciences: More women were employed at two- and four-year colleges; private companies employed 39 percent of the men but only 10 percent of the women.
>
> All in all, employment opportunities for women doctorates appear to have been most limited in private corporations, particularly for physical science majors and to a lesser extent for the biological and social science majors.

Job activity. The major job activity for those currently employed full time are indicated in Table 3.10. Men and women differed in two ways: more women were teaching (57 vs. 46 percent of the men), especially in physical sciences and education, and men were more frequently in administration or management. For all other activities, including the category of research, scholarly writing, and artistic production, women and men were employed in about equal proportions.

Table 3.9

Current Employment by Field of Doctorate, Full-Time Employed Only

	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education	
	W	M	W	M	W	M	W	M	W	M
	(N=248)	(N=310)	(266)	(374)	(236)	(300)	(137)	(201)	(456)	(539)
Four-year college that does not offer a doctoral degree	47.6	36.5*	27.1	22.2	14.8	15.3	30.7	11.4**	28.7	30.8
University that offers doctoral degree	38.7	51.3*	40.6	42.5	45.8	45.3	29.2	30.8	39.9	36.4
Two-year college	3.6	.3*	1.5	1.6	5.5	1.0**	4.4	.5*	3.3	5.2
Elementary or secondary school or school system	1.2	0.0	2.6	1.9	1.7	.7	2.2	.5	12.9	13.0
My own professional office or professional partnership	1.6	.6	3.0	4.8	.4	2.3	1.5	.5	1.3	1.3
Self-employed in business	0.0	.6	1.1	1.1	.4	.3	0.0	.5	.4	.4
Postdoctoral fellowship	.8	0.0	.8	.8	2.1	1.0	3.6	1.5	0.0	0.0
Private profit-making company	0.0	0.0	1.9	5.3*	5.1	10.7*	9.5	38.8**	.7	1.5
Nonprofit research organization or institution, not part of a university	.8	.6	2.6	2.7	3.8	5.3	5.1	2.0	.2	1.5
Public or private welfare organization	0.0	0.0	1.5	1.6	.4	0.0	0.0	0.0	0.0	.2
Hospital or clinic	0.0	0.0	3.8	3.7	6.4	3.0*	2.9	.5	1.5	.9
Federal government	0.0	2.3	5.3	6.1	5.1	11.0*	5.8	10.0	2.6	3.2
State or local government	.4	.6	2.6	1.6	2.1	1.3	1.5	0.0	2.4	1.9
Church or religious organization	2.8	2.3	.4	.3	0.0	0.0	0.0	0.0	1.1	1.1
Other or no answer	2.4	4.2	4.9	3.7	6.3	2.7	3.6	3.0	4.5	2.8

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

Table 3.10

Current Major Job Activity for Those Employed Full Time

	Percentage Responding											
	Humanities		Social Sciences		Biological Sciences		Physical Sciences		Education		All	
	W (N=248)	M (N=310)	W (266)	M (374)	W (236)	M (300)	W (137)	M (201)	W (456)	M (539)	W (1343)	M (1724)
Teaching	77.8	73.5	55.3	47.1	41.5	34.0	44.5	25.9**	58.6	44.9**	57.0	46.4**
Research, scholarly writing, artistic production	3.6	4.2	15.0	15.2	38.1	34.7	34.3	35.3	3.1	3.5	14.9	15.3
Administration or management	11.3	17.1	11.3	17.4*	8.5	20.0**	8.8	28.9**	23.9	39.3**	14.8	26.0**
Professional service to patients or clients	1.6	.3	11.3	13.6	3.4	6.0	4.4	1.0	5.7	6.7	5.5	6.3
Other professional	1.6	1.6	2.3	1.1	2.5	2.3	3.6	2.5	2.0	1.3	2.2	1.6
White collar, clerical or sales	.4	0.0	0.0	.5	0.0	0.0	0.0	0.0	0.0	.2	.1	.2
Skilled or semiskilled worker	0.0	0.0	0.0	0.0	.4	0.0	0.0	.5	0.0	0.0	.1	.1
Other	3.7	2.3	3.8	2.1	3.4	2.7	3.6	4.5	4.6	3.0	3.7	2.8
No answer	1.6	1.0	1.1	2.9	2.1	.3	.7	1.5	2.2	1.1	1.6	1.4

* $p<.05$ Chi-square tests of significance of percentage differences between sexes

** $p<.01$ Chi-square tests of significance of percentage differences between sexes

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How many hours a week? One of the indications of professional commitment is the time spent in job and professionally related activities. The number of hours per week for full-time employed men and women in each of the five fields are given in Table 3.11. Overall, men averaged 52.1 hours per week and women 50.4 hours. More specifically, a higher percentage of the women spent 40 hours per week or less and a greater portion of the men spent over 50 hours per week. By field, more women in education and humanities reported work weeks under 40 hours (in comparison to men in those fields as well as women and men in other fields). Also, twice as many men as women in the social sciences said they spent over 60 hours per week in job and professionally related activities. In part, this is probably explained by the number of men who, as indicated in a recent survey of psychologists, are more likely to have a second job on a part-time basis (APA Monitor, 1973). Men are also more likely to spend time on consulting or professional writing (see publication rates discussed in Chapter 5).

One of the reasons many women doctorates spend less time on job and professional activities is that they spend more of their time on household tasks and, for some, on child care. Married women, with or without children, spent an average of 49 hours per week on their employment and professional activities, which was three hours less than the average reported by single women. On the other hand, married men averaged 53 hours per week (those with children 52), and single men averaged 51.[1] Thus, if time spent is an accurate

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[1]Analysis of variance test indicated significant interaction between sex and family status ($p<.05$).

Table 3.11

Number of Hours Per Week in Job and Professionally Related Activities,

Current Full-Time Employed Only

	Percentage Responding											
	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education		All	
Number of Hours	W (N=248)	M (N=310)	W (266)	M (374)	W (236)	M (300)	W (137)	M (201)	W (456)	M (539)	W (1343)	M (1724)
Up to 40	29.4	21.3*	21.4	17.1	19.5	14.4	22.6	14.9	25.9	18.1**	24.1	17.4**
41 - 50	31.9	29.0	41.4	36.6	38.6	38.6	40.9	49.2	33.6	41.8*	36.4	38.7
51 - 60	21.8	31.6*	25.9	31.8	30.9	31.7	27	27.9	26.5	27.5	26.4	29.9*
Over 60	12.9	12.3	5.2	10.7*	9.8	14.3	7.3	7.0	8.6	9.8	8.8	10.8
No response	4.0	5.8	6.1	3.8	1.2	1.0	2.2	1.0	5.4	2.8	4.3	3.2

	W	M
Average number of hours per week:	50.4	52.1

* $p<.05$ Chi-square tests of significance of percentage differences between sexes

** $p<.01$ Chi-square tests of significance of percentage differences between sexes

estimate, single women and married men appear to be slightly more career oriented.

Nevertheless, whether married or single, women generally spend more time than men on domestic responsibilities. Astin (1969) reported that her sample of women doctorates spent between 18 to 19 hours a week managing their household and an additional average of 10 hours per week in child care. Male doctorates, who are more likely to be married than women doctorates,[2] undoubtedly spend less time on day to day household management. Most certainly, many male doctorates spend a good deal of time on home repairs or other household duties including child care, but there is no evidence that they average as much as the 28 hours per week Astin reported for women doctorates. Of course, some women do have outside assistance with their household and child care responsibilities: in Astin's sample, 47 percent had someone who came in once or twice a week, and 16 percent employed a full-time housekeeper.

Unemployment

It will be recalled that women were unemployed, on the average, between 7 to 8 percent of the time since receiving the doctorate. Moreover, a similar percentage of the women were unemployed at the time they received the questionnaire. The reasons for current and other periods of unemployment are summarized in Table 3.12. More than one reason could be given for periods of unemployment since, for example, a woman might be unemployed one year because

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[2]See Chapter 6. Not only were men more likely to be married (over 80 percent vs. less than 50 percent of the women), but over half of their wives were not employed and thus presumably available to assume a greater portion of household management.

Table 3.12

Reasons for Current and Other Periods of Unemployment

Reasons for Unemployment[1]	Number and Percentage (in parentheses) of Total Responses for Each Reason[2]			
	Current Unemployment		Other Periods of Unemployment	
	W	M	W	M
	42 responses	12 responses	524 responses	20 responses
I did not receive an offer	13 (9)	7 (58)	39 (7)	5 (25)
I received an offer but I felt that it was not commensurate with my ability, training or interests.	9 (6)	1 (8)	19 (4)	2 (10)
I received an offer but did not like the geographical location	4 (3)	0	8 (2)	1 (5)
No suitable jobs were available in the same locale as spouse's job	21 (15)	0	86 (16)	0
I was not employed because of anti-nepotism policy of spouse's employer	13 (9)	0	43 (8)	0
I was pregnant	6 (4)	0	103 (20)	0
I had poor health	7 (5)	0	15 (3)	2 (10)
I did not want to work	27 (19)	1 (8)	74 (14)	4 (20)
Spouse did not want me to work	6 (4)	0	20 (4)	0
I did not want to teach	4 (3)	0	10 (2)	0
I could not find competent domestic help or day care for children	11 (8)	0	47 (9)	0
Other	22 (15)	3 (25)	60 (11)	6 (30)

[1]Excluding retirement

[2]Based on those who responded to this question

of pregnancy, several other years for lack of domestic help, and finally not be able to find a job in her husband's locale. While this might be the same women in all three instances, these were essential three periods of unemployment and three different, albeit interrelated reasons.

For current unemployment (columns one and two of Table 3.12), the reason most frequently given by women was that they did not want to work (19 percent), followed by the lack of suitable jobs in the same locale as their husband's job (15 percent). The "other" reasons category also received 15 percent of the responses. For men, there were only 12 responses, with 7 indicating that they did not receive an offer.

For periods of unemployment other than current, pregnancy was the most common reason given by women: one-fifth of the 524 responses. The second ranked reason by women was the lack of suitable jobs in their locale (16 percent), followed by "I did not want to work" (14 percent). There were only 20 men's responses, with a fourth indicating the absence of job offers as a reason.

Marriage and unemployment. It is interesting to note that the majority of reasons given by women for unemployment deal with their marital status and family life responsibilities. Specifically, 57 percent of the periods of unemployment were due to: pregnancy (20 percent), no suitable jobs being available in husband's locale (16 percent), the anti-nepotism policy of husband's employer (8 percent), the lack of domestic help or day care for children (9 percent), and finally, husbands who did not want their wives to work (4 percent). In addition, many of those who said they did not want

to work preferred to stay home with their children rather than seek domestic help, even if it was available. The following comment from a 1950 graduate represents this viewpoint:

> A woman with a doctorate and no financial need to work always has a conflict in her role as wife, mother, community member and professional. I resolved the conflict by placing my husband and family first and using my professional background and strong interest in my field in volunteer community activities.

Another woman who had preferred her domestic role felt she had fallen too far behind developments in her field:

> I have not 'used' my professional education because I had 4 children and lived in suburbia and loved being a full-time housewife. Now I feel out of it and <u>am</u>.

Another woman who thought she was out of touch with her field even though she graduated in 1968 said:

> I fully expected to reenter teaching when the children entered school, but they are both in school now and I feel both completely out of touch with my field--political science--and also somewhat bored by it. In my case there is no pressing economic need for employment.

Some unemployed women felt very strongly that their professional training was being put to use in other ways. One woman who said she had earned a degree as a challenge rather than for professional advancement, status, or income offered:

> Although I am not engaged in my professional area for financial remuneration, I use my professional training in every facet of my life: working with our children, managing my home and assisting my husband in his professional area. In addition, I both teach and write in connection with the youth work I do in church and scouting.

Other "unemployed" women were able to collaborate with their husbands on projects because their subject fields were alike or similar:

> I am remaining professionally active by carrying out independent research and writing in my home, as well as keeping up with pertinent scientific literature. Because my husband's field is allied to mine, we can do joint projects. Monetarily this is not rewarding; but as well as being satisfying for me, I feel that I am contributing in a small way.

Similarly, another married woman added:

> Some of the time listed as non-working, I was working in collaboration with my husband at home.

But others, such as the following married woman who graduated in 1950, had been salaried only a third of the time, was currently using her training in a very professional though not by her admission, in a very lucrative way:

> I do free-lance writing based upon research. The research, done in the libraries, historical societies, etc. of the region in which I live, is of as high a calibre as any earlier work I did while teaching full time.

Finally, a few women noted the need for career counseling for women who have not been employed continuously:

> Since embarking upon the doctorate, I have always felt the need for some counseling (and sponsoring) for career guidance, and this is still the case. My husband and I have raised three children who are all launched on their own careers and are happy people. We have had a good marriage and a good family life. My career has lacked continuity and has not really been commensurate with my training or ability. Due to a long period of family responsibilities and living in a suburb, I have had to take whatever jobs came my way . . . . The need for skilled sensitive career counseling is imperative.

Chapter 4

Doctorates in Academe

> I could be content with only teaching but the nature of the university is such that one must conduct a research program as well.
>
> I sincerely believe that my full potential as a teacher and investigator has never, and will never, be fully realized because I am a professional woman rather than a man. I have had neither the good job opportunities nor recognition of accomplishments in my present position. I am bitter about it all.

As indicated in the last chapter, close to 70 percent of the employed men and women in the survey were working at two- or four-year colleges or at universities (specifically, 73% of the women and 69% of the men). The actual proportion of those with doctorates employed at postsecondary institutions is somewhat less than this because the survey sample included a disproportionately low number of doctorates in the physical sciences (since fewer women had degrees in that area; see Chapter 2), and fewer physical scientists are employed at educational institutions (as seen in Table 3.9 of Chapter 3). A 1968 report by the National Research Council, for example, indicated that half of a random sample of those who earned a doctorate between 1935 and 1960 had spent their entire career in academic employment, and another one-fourth had spent part of their time in academe (National Research Council, 1968).

While most doctorates choose academe, it should be pointed out that most people employed in academic institutions do not have a doctorate. A 1972-73 survey of college and university faculty by the American Council on Education (ACE) indicated that 37 percent of the men and 18 percent of

the women had a Ph.D. or an Ed.D. (Bayer, 1973).[1] That same survey also estimated that women comprised 20 percent of the faculty at all postsecondary institutions (22 percent in two- or four-year colleges and 17 percent in universities).

In view of the large number of doctorates who choose an academic setting, a closer look at their particular employment patterns and preferences would seem in order. Accordingly, this chapter includes a discussion of trends in employment, faculty rank, and interest in teaching versus research.

Trends in Employment

It was pointed out in the last chapter that similar proportions of men and women were currently employed at doctoral granting universities (about 40 percent), but that proportionately more women were employed at four-year colleges that did not offer a doctorate (see Table 3.8 of Chapter 3). Is there any evidence of a shift taking place in this pattern? An inspection of current employment by graduates for each of the three career lengths suggests that there is a trend toward hiring a larger proportion of the more recent women graduates in universities. As shown in Table 4.1, 40 percent of the 1968 women doctorates were employed in universities compared to only 35 percent of the male group. Among 1950 graduates the difference was reversed: 46 percent of the men and 42 percent of the women held positions at universities. On the other hand, at the four-year

[1] An ACE survey of faculty in 1969 indicated that somewhat higher proportions held a Ph.D. or an Ed.D.: 21.7 percent of the women and 46.1 percent of the men.

Table 4.1

Current Academic or Other Selected Type of Employment,

Full-Time Employed by Year of Degree

	Percentage Responding (Rounded to nearest whole number)					
	1950 Graduates		1960 Graduates		1968 Graduates	
	W	M	W	M	W	M
	(348)	(534)	(344)	(400)	(489)	(598)
Four-year, nondoctoral college	27	17	35	25	28	32
University offering doctoral work	42	46	37	43	40	35
Two-year college	5	2	3	1	4	4
Elementary or secondary school	5	2	6	5	6	7
Private company	3	11	2	7	3	7
Federal, state or local government	6	8	6	8	5	6
Other (includes self-employed, non-profit research organization, welfare and religious organizations, hospital and clinic, and other)	12	14	11	11	14	9

colleges which do not offer a doctorate, a much different pattern emerges: more of the most recent male graduates were employed at these institutions. While only 17 percent of the 1950 male doctorates were employed at four-year colleges, one-fourth of the 1960 group and a third of the 1968 men held positions at these institutions. For women the percentages fluctuated from 27 percent for 1950 graduates, to 35 percent for 1960 graduates, and back to 28 percent for the 1968 group. Similarly two-year colleges and elementary and secondary school systems employed more of the recent than earlier male graduates while the proportion of women remained fairly constant over the three time periods. In general then, relative to earlier graduates more women with recent doctorates were finding emloyment at the universities while more of the men with recent doctorates were turning to two- and four-year colleges as well as the public school sector.

Further support and interpretation of this trend in employment may be noted in Table 4.2, which indicates the first postdoctoral position by year of degree. These data, coupled with the previous table on current employment, indicate that more of the women than men who graduated in 1968 had moved to a university after first being with another type of employer. That is, while one-third of the 1968 men and women graduates were first employed at universities following receipt of their doctorate, within five years the number had grown to 40 percent of the women but only 35 percent of the men. Similar shifts, however, were not taking place for either of the two earlier groups, and, in fact, it would appear that for 1960 graduates men were more likely to move to a university position from another employer. One interpretation of this trend could be that affirmative action programs have increased

the number of openings for women at universities and these have benefited younger graduates most.

The proportion of women employed at a two- or four-year college as their first postdoctoral job was similar for graduates of each of the three time periods, but for men there was a slight increase among 1968 graduates (accompanied by decreases in the percentage employed by government or private industry). These changes, which coincide with changes in current employment mentioned earlier, probably reflect the phenomenal growth in two- and four-year colleges, particularly public colleges, in the 1960's.

Rank or Position

According to the 1972-73 survey of faculty by the American Council on Education, greater proportions of men than women in all types of institutions held senior-level ranks. For example, 30 percent of the men held the rank of professor compared to 11 percent of the women; 25 percent of the men and 21 percent of the women were associate professors (Bayer, 1973). Similar figures have been reported in many earlier studies as well (see, for example, Bernard, 1964). In large part, men as a group hold higher ranks because more of them have a doctorate and, as pointed out by data in Chapter 3, they tend to have fewer interruptions in their careers and thus more years of experience. But would these differences in rank exist if only men and women with doctorates were compared, and moreover, if the length of service was the same for both groups? As will be shown by the analyses of the survey data, men retained their advantageous position, although not to the same extent.

Table 4.2

First Postdoctoral Academic or Other Selected Type of Employment, Full-Time Employed by Year of Degree

	Percentage Responding (Rounded to nearest whole number)					
	1950 Graduates		1960 Graduates		1968 Graduates	
	W (328)	M (541)	W (314)	M (396)	W (483)	M (578)
Four-year, nondoctoral college	28	22	30	26	30	29
University offering doctoral work	36	42	33	35	34	33
Two-year college	2	1	2	1	2	2
Elementary or secondary school	6	3	7	8	7	8
Private company	3	8	2	7	2	4
Federal, state or local government	5	10	4	10	4	5
Postdoctoral fellowship	5	2	3	3	7	7
Other (includes self-employed, nonprofit research organization, welfare and religious organizations, hospital and clinic, and other)	15	12	19	10	14	12

The current rank or position for doctorates employed full time at a college or university is given in Table 4.3 and summarized as follows:

Rank or Position for Full-Time College or University Doctorates (Table 4.3)

More men than women were professors.

About equal numbers of women and men were associate professors.

More men than women were presidents, deans and department heads.

More women than men were instructors (lecturers), assistant professors, or held research appointments without faculty status.

Although these differentials are nowhere near as great as for all teaching faculty regardless of degree earned, there are still more men at the senior rank and in administrative positions.

Rank by years of experience. Because rank and length of service are related, the average rank was computed for men and women who had an equal number of years of experience. Averages were computed for those with 22 or 23 years, 13 or 14 years, and 5 or 6 years of experience.[2] Average rank was determined by using a four-point scale with professor = 5, associate professor = 4, assistant professor = 3, and instructor or lecturer = 2.

The results of this analysis, given in Table 4.4, indicate that men and women doctorates with 22 or 23 years of experience were very similar

[2]While almost all of the individuals in each of the three groups would have been employed every year since graduation, some could have graduated at an earlier time and been employed a portion of the years. For example, a few women with 5 or 6 years of full-time experience might have graduated in 1960 or even in 1950, as well as in 1968.

Table 4.3

Rank or Position for Those Currently Working Full Time at a College or University[1]

	Percentage Responding	
	W (N=1086)	M (N=1212)
Research appointment without faculty status	3.9	.6**
Instructor or lecturer	4.6	.4**
Assistant professor	18.5	12.2**
Associate professor	25.1	23.2
Professor	30.5	35.1*
Department head	8.6	13.1**
Dean or president	2.0	7.7**
Other administrative position	2.4	3.7*
Other	3.2	2.4
No response	1.2	1.6

[1]Includes two-year colleges.

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

in their rank. Similarly, those with 13 or 14 years of experience were also fairly similar in the average rank attained, although an inspection of the percentage of men and women at each rank (not given in Table 4.4) revealed that more men had become full professors. Specifically, 68 percent of the men and 59 percent of the women were full professors after 13 or 14 years of postdoctoral employment. As Table 4.4 further indicates, after 5 or 6 years of experience men were clearly ahead in average rank, having attained a mean rank of 3.72, compared to 3.61 for women. Put another way, 63 percent of the men and 52 percent of the women were full professors or associate professors at that point in their career, with more men in particular at the latter rank (52 vs. 40 percent of the women).

These figures strongly suggest that men employed in colleges and universities have been promoted more rapidly than women. After 5 or 6 years of experience, just over half of the men, but 40 percent of the women were associate professors; after 13 or 14 years, just over two-thirds of the men but 59 percent of the women were full professors; and after 22-23 years, 88 percent of the men and 85 percent of the women were full professors. Only for the last career length were the percentages for men and women comparable.

Interest in Research vs. Teaching

Several past studies of college teachers have pointed out that women faculty are generally more interested in teaching than in research (Bernard, 1964; Eckert and Stecklein, 1961). More recent surveys have not shown a change in this interest.

A 1969 ACE-Carnegie Commission on Higher Education survey of college and university faculty reported that 61 percent of the women,

Table 4.4

Average Rank for Each of Three Career Lengths

for Those Employed in Four-Year Colleges and Universities

Number of Years of Full-Time Experience	Average Rank[1]	
	W[2]	M[2]
22 or 23	4.83 (102)	4.87 (180)
13 or 14	4.54 (152)	4.65 (170)
5 or 6	3.61 (272)	3.72* (337)

*Difference is significant, $p<05$.

[1]Average determined by using the following numerical values for each rank: professor = 5, associate professor = 4, assistant professor = 3, instructor or lecturer = 2.

[2]N in parentheses.

versus 37 percent of the men, were "very heavily" interested in teaching (Bayer, 1970).[3] But once again the smaller number of academic women with a doctoral degree, plus the tendency for women to obtain advanced degrees in subject areas which do not emphasize research would in part account for overall differences in interests between women and men. Do these differences hold up for those with doctorates and when the proportion from each subject area is taken into account? The results given in Table 4.5 indicate that while the differences were greatly reduced, women were still slightly more interested in teaching than were men. Thirty-two percent of the women said they were "very heavily" interested in teaching, compared to just under 26 percent of the men. As also indicated in footnote 2 of Table 4.5, women in every field except education were more heavily interested in teaching than were men in the same field. On the other hand, 26 percent of the men versus just over 19 percent of the women were "leaning toward research" in their interests. Twice as many men as women (5.6 vs. 2.8) said they were interested in neither teaching nor research, and presumably this reflected largely their interest in administration. Fewer women, as Table 4.3 has indicated, also held administrative positions.

In view of their somewhat greater interest in teaching (relative to men, that is), and in view of the higher proportion of women at two- and four-year colleges, it is not surprising that more women were

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[3]Other responses to the question of where their current interests lie were: heavily in research, women=2%, men=5%; in both but leaning toward research, W=9%, M=22%; in both but leaning toward teaching, W=29%, M=36%.

Table 4.5

Interest in Research vs. Teaching[1]

	Percentage Responding	
	W (N=1086)	M (N=1212)
Do your interests lie primarily in teaching or in research?[2]		
Very heavily in research	4.8	4.2
In both, but leaning toward research	19.4	26.0**
In both, but leaning toward teaching	39.1	37.6
Very heavily in teaching	32.2	25.6**
Neither	2.8	5.6**
No response	1.7	1.0

[1]By those working full time at a two- or four-year college, or a university

[2]By subject areas, percentages indicating that they were "Very heavily interested in teaching" were as follows:

	W	M
Humanities	36	26
Soc. Sci.	22	17
Biol. Sci.	18	12
Phys. Sci.	36	13
Education	42	40

**p<.01 Chi-square tests of significance of percentage differences between sexes

teaching solely undergraduates and that more men were teaching graduate courses (see Table 4.6).[4] Thirty-five percent of the women vs. 22 percent of the men said their teaching responsibilities were currently "entirely undergraduate," while about two-thirds of the men and slightly over half of the women reported teaching entirely at the graduate level or had some graduate courses. The trend, however, discerned by analyzing responses according to year of graduation, was toward more men teaching undergraduate courses: 28 percent of the 1968 male graduates compared to only 16 percent of the 1950 graduates taught only undergraduate courses. The percentage of women, on the other hand, was the same (33 percent) for both time periods. The shift in teaching responsibility is at least partially attributed to the increase in the number of men teaching at two- and four-year colleges as noted earlier in this chapter.

Some Comments about Women and Teaching

While it should be noted that almost two-thirds of the women doctorates were at least partly interested in research, more women than men had indicated a particular interest in teaching. And not only were women more interested in teaching but, as noted in the last chapter (Table 3.11), teaching was most likely to be their major job activity. Astin (1965), in fact, argued that many women have chosen a college instead of a university position because they have a preference for teaching over research. She goes on to state that:

---

[4]Of course, this is not meant to imply cause and effect; women may have been more interested in teaching because they taught largely undergraduates, and because a higher proportion taught at two- and four-year colleges.

Table 4.6

Current Teaching Responsibilities

	Percentage Responding	
	W (N=1086)	M (N=1212)
What are your teaching responsibilities this year?		
Entirely undergraduate	34.9	22.4**
Some undergraduate, some graduate	42.6	50.0*
Entirely graduate	11.0	15.9*
Not teaching this year	9.5	10.3
No response	2.0	1.4

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

> Moreover, the two sexes may differ in their conceptions of the proper role of the scholar and the educator. That is women may want to make an impression on the world through direct contact with people; whereas men may prefer to exert change and influence the world abstractly and indirectly, through the written word.
>
> (P. 85)

Bernard (1964), on the other hand, has explained the interest of academic women in teaching by relating it to their societal role:

> That the major contribution of women to the academic enterprise should have been as teachers is related also, presumably, to the fact that the role of teacher is consonant with that of other roles assigned to women in our society. As mothers, women have been traditionally conservators and transmitters of non-controversial knowledge.
>
> (P. 125)

These societal or sex role expectations may be what underlay the comment of one woman in the survey who said:

> I could be content with only teaching but the nature of the university is such that one must conduct a research program as well.

Another was more vehement in her feelings:

> I have resigned my position without another job lined up because I disapprove of the policies of my university which does not recognize, reward nor care about good teaching.

But many men were also committed to teaching instead of research, prompting one man to voice a not uncommon complaint about academic promotion policies:

> There is getting to be far too much emphasis on publications--university promotions, tenure, etc. tend to depend upon publications. Administration interest in good teaching is primarily 'lip service.'

Emphasis on publications in determining promotions may be one reason why women doctorates with equivalent lengths of service have not entirely kept pace with men. A closer look at their publications record as well as their income is presented in the next chapter.

Chapter 5

The Fruits of Labor: Publications, Income, and Job Satisfaction

Discussed in this chapter are those aspects of a career that many consider indices of achievement: number of publications and annual income. These, however, are not the only measures of a worthwhile or satisfying career. Personal satisfaction with job or career is yet another dimension of success, and data from the survey related to it will also be presented in this chapter.

Publications

Only a minority of the doctorates of either sex have published one or more books. Table 5.1 indicates that 78.1 percent of the men and 73 percent of the women had not published a book as a sole or senior author. But in general men doctorates published more than women doctorates: they published more books, either as the sole or senior author, or as a junior author or editor, and they published more professional articles in journals.

Of those who had published, men were particularly more productive than women in the 3 to 7 book range, especially in the social sciences and in education. Men also published more books as a junior author or editor (see Table 5.2). Most significant were the 14.6 percent of the men who published 1-2 books (vs. 12.5 percent of the women), and the 4.3 percent who published 3-4 books (vs. 2.4 percent of the women).

Over 80 percent of both men and women published at least one article in a journal or magazine. But as indicated in Table 5.3, men were once again generally more productive: they averaged approximately 15 publications, to 9 for women. The median figures, less affected by unusually high numbers (a few people reported 200 publications or more), were 5.7 and 3.5 for men and women respectively. More women (41.3 percent) than men (31.3 percent) reported that they had published from 1 to 5 articles and approximately equal proportions (18 percent) published 6-10 articles. But men were clearly more productive in the 11 articles and over categories, especially in the social sciences.

Some Highlights of Publication Figures for Men and Women Doctorates (See Tables 5.1 and 5.3)

Books (published as sole or senior author)

27 percent of the men and 22 percent of the women had published a book.

6.7 percent of the men and 4.0 percent of the women published 3 - 7 books.

Articles

Over 80 percent of both men and women published at least one article in a journal or magazine.

Men averaged 15 publications to 9 for women, and the median figures were 5.7 articles for men and 3.5 for women.

Most publishing was done by doctorates working in nonprofit research organizations, universities, the federal government, and colleges, in that order. Men working in research organizations and in universities published twice as many articles as did the full-time employed women in those settings.

Table 5.1

Number of Books Published as Sole or Senior Author

	Percentage Indicating Each Response											
	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education		All	
	W	M	W	M	W	M	W	M	W	M	W	M
Number of Books	(N=310)	(N=335)	(388)	(398)	(315)	(314)	(190)	(214)	(585)	(609)	(1788)	(1870)
None[1]	63.8	60.9	69.8	60.6	92.4	89.2	94.7	90.2	78.1	73.6	78.1	73.0
1 - 2	28.4	26.0	23.7	27.4	5.4	9.2	3.7	7.9	17.1	17.7	17.0	18.7
3 - 4	5.2	8.7	5.7	7.3	1.0	1.0	1.1	.9	3.4	4.3	3.5	4.8*
5 - 7	1.6	2.4	.5	3.3**	0	.3	.5	.5	.2	2.1**	.5	1.9*
8 - 10	0	1.2	.3	.8	.6	0	0	0	.3	1.3	.3	.8
11 or more	1.0	.9	0	.8	.6	.3	0	.5	.9	1.0	.6	.7

[1]Includes those that indicated "0" or left the space blank.

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

Table 5.2

Number of Books Published as Junior Author or as Editor

	Percentage Indicating Each Response											
	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education		All	
Number of Books	W (N=310)	M (N=335)	W (388)	M (398)	W (315)	M (314)	W (190)	M (214)	W (585)	M (609)	W (1788)	M (1870)
None[1]	82.6	73.7	79.1	73.6	91.1	87.0	91.1	86.5	80.9	78.8	83.7	79.0
1 - 2	12.3	18.5*	16.8	18.3	6.7	9.2	7.4	11.7	14.5	13.8	12.5	14.6*
3 - 4	2.3	5.7*	3.1	5.5*	1.6	2.9	1.1	1.9	2.9	4.4	2.4	4.3**
5 - 7	1.3	.9	.8	1.3	.6	.6	.5	0	1.0	2.3	.9	1.3
8 - 10	1.0	.9	.3	.5	0	.3	0	0	0	.3	.2	.4
11 or more	.6	.3	0	.8	0	0	0	0	.7	.3	.3	.3

[1]Includes those that indicated "0" or left the space blank.

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

Table 5.3

Number of Professional Articles Published in Journals or Magazines

	Percentage Indicating Each Response											
	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education		All	
	W	M	W	M	W	M	W	M	W	M	W	M
Number	(N=310)	(N=335)	(388)	(398)	(315)	(314)	(190)	(214)	(585)	(609)	(1788)	(1870)
None, no answer	26.2	20.6	17.2	12.6	7.3	5.7	7.4	6.6	21.2	23.3	17.3	15.6
1 - 5	43.2	34.0	44.3	31.7**	32.1	17.5**	41.1	34.6	43.4	35.6	41.3	31.3**
6 - 10	17.1	17.9	16.5	17.8	17.8	19.7	24.7	20.6	18.1	16.4	18.2	18.0
11 - 15	6.1	11.3*	9.0	8.8	13.3	9.2	9.5	12.1	5.8	9.0	8.3	9.8*
16 - 25	5.2	8.1	7.5	13.1*	11.1	15.3	8.4	9.8	7.4	7.1	7.8	10.2*
26 - 50	1.6	6.3*	4.1	10.3**	12.7	16.6	6.3	11.7*	3.2	6.1*	5.1	9.4**
Over 50	.6	1.8	1.3	5.8**	5.7	15.9*	2.6	4.7	.9	2.5	2.0	5.6**
Average number of publications (approximate)											9	15
Median number of publications											3.5	5.7

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

In research organizations, men averaged 31 articles, women 15; men in universities averaged 24, women 12. At four-year colleges the differential between sexes as well as the overall averages were considerably less: men averaged 7 articles, women just over 5. Men and women working for the federal government tended to publish extensively, but once again the differential between sexes was not as dramatic as in universities or research organizations: men averaged 21 articles and women 16.

Certainly one reason that men published more is that they had fewer career interruptions than women; that is, they were employed more of the time and therefore presumably had more opportunity to publish. Would there still be a disparity for men and women who had been employed full time an equal number of years? Figures 5.1 and 5.2, which portray publication rates for those employed full time in universities and colleges according to total years employed, indicate that men were still more productive.

Number of Publications, by Years Employed and Place of Employment (Figures 5.1 and 5.2): Some Highlights

Universities: With 5 or 6 years of experience, men averaged 9 articles and women 7. However, the disparity increased, so that after 13 or 14 years of experience men averaged 20 articles and women 11, and with 22 or 23 years, men averaged about 13 more articles than women.

Colleges: After 5 or 6 years and 22 or 23 years, men averaged only one more article than women. In the 13-14 range, men averaged 7 articles and women 4.

Federal Government: Men averaged about 4 more publications at each career length; for both 13-14 and 22-23 years of experience, men averaged in the middle 20's and women about 20 publications.

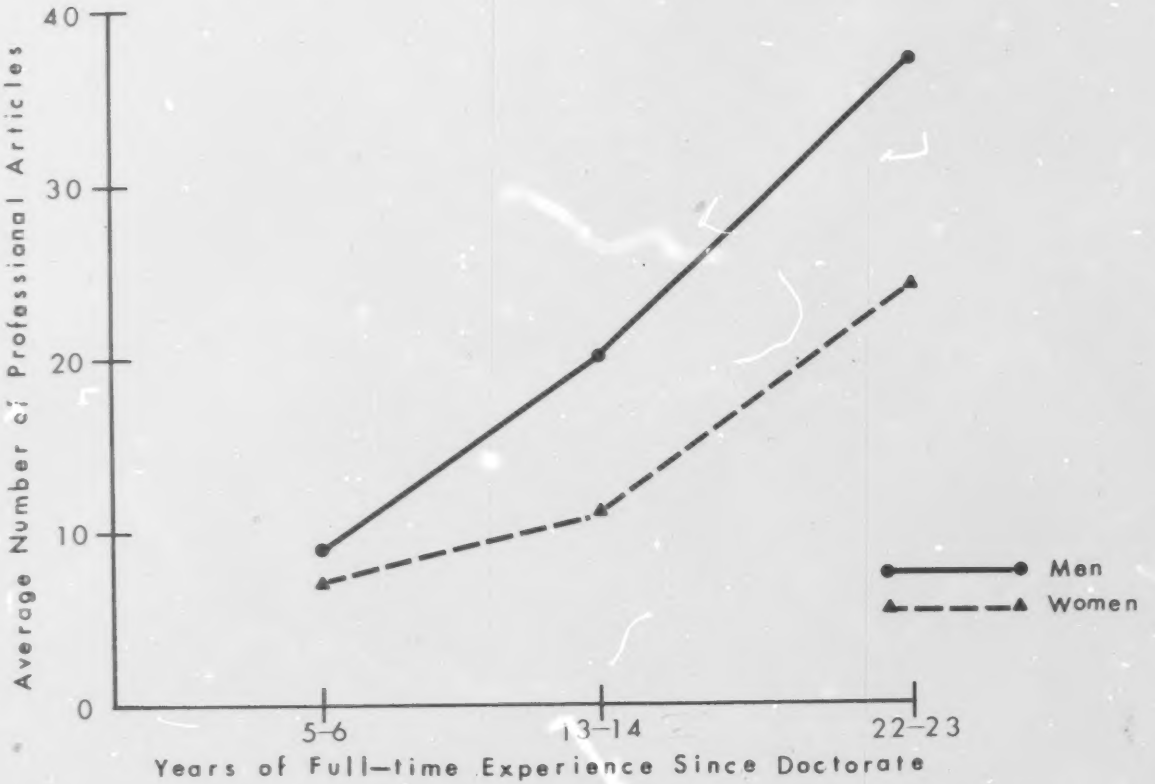

Fig. 5.1 Average Number of Professional Articles Published, by Years of Experience for Those Employed at Universities

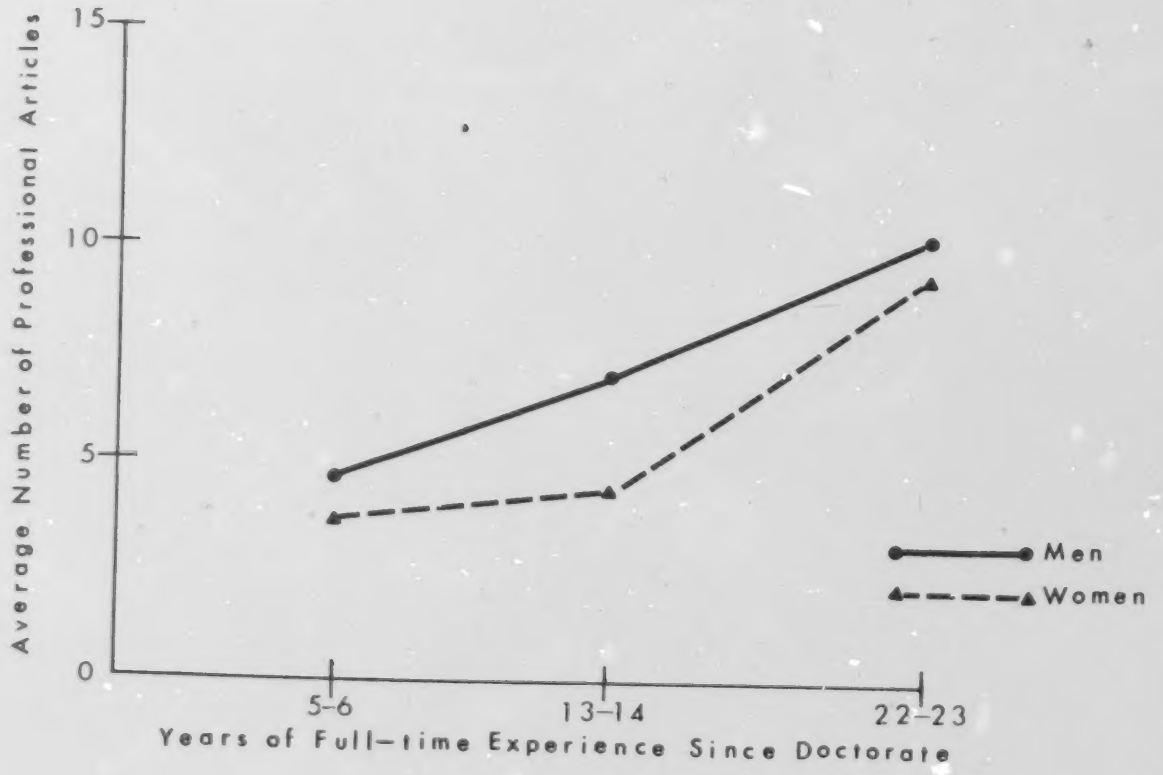

Fig. 5.2 Average Number of Professional Articles Published, by Years of Experience for Those Employed at Colleges

Clearly then, while type of employment is highly predictive of productivity as measured by volume of published work, the variation according to sex even after controlling for years of postdoctoral service is considerable. Similarly, while there are large differences between such fields as the physical sciences and the humanities, men were still generally more productive than women within each field.

These results conflict with Bernard's (1964) analysis of publication rates, and with data presented by Simon, Clark and Galway (1967), both of which reported similar productivity rates for men and women. Bernard, in fact, has argued that if employment and major field factors are controlled, most of the disparity in men and women's publication rates would disappear. But the results of this study indicate otherwise. More likely the lower productivity rates for women might be due to a host of other reasons. Johnson and Stafford (1973, 1974) have shown that women are employed in colleges and universities which place less emphasis on research and more on teaching. This, of course, is also related to their greater interest in teaching as discussed in Chapter 4. For some women, their interest in teaching was accompanied by an abhorrence for research. As one woman faculty member at the university stated:

> I hate research, but the university pushes for you to do research even though you're not interested.

It has been argued, in fact, that the publication rates for men and women would be very similar if only those interested in research were compared. To investigate this possibility, rates for men and women employed in universities and colleges were further analyzed for those who indicated that they were "very heavily" interested in research, or in research and teaching with emphasis

on the former. Again, men out-published the women. However, there were about half as many women as men at each of the career lengths and the number of women was not especially large (ranging between 28 to 63). The results, therefore, are somewhat tentative:

At 5-6 years, men averaged 1.5 more publications than women

At 13-14 and 22-23 years, men averaged 13 more publications than women

Only the difference for the 13-14 year group was statistically significant ($p<01$)

Nevertheless, the results do strongly suggest that women doctorates' greater interest in teaching does not totally account for their lower overall publication rates.

Domestic Responsibilities and Publication Rate

In a study of Radcliffe Ph.D.'s, some had mentioned that there was less incentive for them to publish in order to earn higher salaries because they were less concerned about supporting a family (Radcliffe College, 1956). Fewer women would likely now accept this rationale, but many may continue to be pressed for time or opportunity to do research because of domestic responsibilities. The following comment by a married woman captures that dilemma:

> I find it very difficult to hold on to a full-time position, commute, keep house and care for three children, and still be expected to publish. Tenure should not be based on publishing. In my field, I would have to spend summers in Europe and I simply can't leave my family.

Another complained of the lack of continuity because of the demands on her time, which resulted in work remaining incompleted or done piecemeal:

> I have several pieces of research and three or four papers that need time for preparing for publication but with classes, directed readings, committee work, thesis supervision and three children your guess is as good as mine when they will be submitted and published.

Some evidence from the survey on the likely effects of domestic responsibilities and interruptions on publication rates for women emerged when analysis indicated that single women and single men had very similar publication rates (an average of approximately 10 articles). However, married women (both with and without children) averaged about half as many publications as married men: 9 vs. 18.

Possible Sex Bias in the Selection of Journal Articles

One study dealing with the selection of journal articles has suggested that "judges tended to prefer authors whose sex was the same as that normative for (or strongly associated with) the professional field in which the article was written--e.g., a female author in dietetics, a male author in city planning" (Mischel, 1974). Because so many fields have a majority of men, this finding suggests that articles by men would have a better chance of acceptance. This advantage, if it in fact existed, will likely diminish since many journals now employ a blind review system.

In summary, many reasons have been offered to explain sex differences in the number of publications among doctorates with identical years of experience and similar employment settings. These included the likelihood of being employed at universities which emphasize teaching, a preference for teaching, less time because of domestic responsibilities, less economic pressure to publish in order to increase income to support a family, and

possible sex bias in the selection of journal articles. To the extent that women's professional, employment, and domestic roles are altered to alleviate some of these factors, their publication rate might be expected to increase accordingly. Of course, throughout this and most analyses of publication productivity, the emphasis has been solely on quantity, not quality or significance of publications.

Income

In 1959-60, women academicians earned about 15 percent ($1000) less than male faculty members (Bernard, 1965). By 1972-73, the difference had increased slightly to 17 percent (approximately $3,400), according to data compiled by the National Center for Educational Statistics (Chronicle of Higher Education, March 12, 1973). Numerous reports for other types of employment have also documented disparities between men's and women's salaries. Have women with doctoral degrees also been paid less than men with similar training? In particular, how do men and women doctorates compare in annual income? Income, it should be kept in mind, includes not only salary from a full-time job but also honoraria, royalties, and for some, salary from a second part-time job.

The median annual income for women, as indicated in Table 5.4, was $4,400 less than that for men, or about a 20 percent disparity. The median annual income for women employed full time was $17,200; for men it was $21,600.[1]

[1]There were only slight differences in the computed median and mean (or average) incomes due to the way in which income information was obtained. Instead of their specific incomes, respondents indicated one of 14 categories, with the highest being "over $31,000." In computing the mean, everyone in this last category was estimated to earn $35,000. Extreme amounts, therefore, did not unduly influence mean incomes. The remaining tables report mean instead of median incomes.

Table 5.4

Median Income for Those

Currently Employed Full Time

(Difference Between Sexes Indicated in Parentheses)

Humanities		Social Science		Biol. Sci.		Phys. Sci.		Education		All	
W	M	W	M	W	M	W	M	W	M	W	M
(N=244)	(N=306)	(261)	(369)	(235)	(299)	(135)	(199)	(445)	(529)	(1320)	(1702)
15,200	19,000	18,200	24,000	16,900	21,800	16,400	21,900	18,100	21,700	17,200	21,600
(3,800)		(5,800)		(4,900)		(5,500)		(3,600)		(4,400)	

The disparity was largest in the social sciences and the physical sciences,where women earned about a fourth less than men. The physical sciences,it will be recalled from Chapter 3, was a field in which four times as many men as women worked in private industry. The generally higher salaries in private industry compared to academe undoubtedly contributed to sex differences in the incomes of physical scientists.[2]

Comparing across the five fields, doctorates in humanities reported the lowest incomes. A major reason for this is that humanities doctorates, as indicated in Chapter 3, were more likely than those in other fields to work in colleges that did not offer doctoral work; the salaries in these institutions were generally not as high as in universities or industry.

Income and Years of Work Experience

Salary and income are, of course, highly related to years of experience. Because women, as a group, had fewer years of full-time employment, it is possible that their income would be much closer to that of men's if the number of years in postdoctoral employment were the same for both sexes. This, however, does not appear to be the case as can be noted in Table 5.5 and Figure 5.3, in which incomes for three lengths of experience are reported. Men's income for all types of employment varied from $18,700 for those with 5-6 years of experience, to $27,100 for those with 22-23 years. Women's income varied from $16,400 to $21,800 for the same time periods.

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[2]For some 170 doctorates from all fields employed in private, profit-making companies, the average income was about $26,000; men averaged $27,000, women $22,000. This was about $7,000 or a little over one-fourth more than doctorates in colleges and universities.

Table 5.5

Current Average Annual Income According to Number of Years in Full-Time Employment, for Those Now Employed Full Time

	Approximate Average Annual Income[1]											
	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education		All	
	W	M	W	M	W	M	W	M	W	M	W	M
	(N=31)[2]	(N=63)	(35)	(97)	(51)	(96)	(17)	(60)	(52)	(99)	(186)	(415)
	(63)	(83)	(47)	(72)	(22)	(36)	(24)	(35)	(98)	(106)	(254)	(338)
Number of Years Experience	(70)	(82)	(72)	(109)	(80)	(97)	(51)	(70)	(174)	(218)	(447)	(576)
22 - 23	19.2	24.5	24.1	28.1	22.4	27.8	21.3	29.1	21.5	26.1	21.8	27.1
13 - 14	17.2	19.6	20.1	25.0	20.5	24.9	18.7	24.3	20.1	23.7	19.3	23.4
5 - 6	13.5	15.0	17.7	19.1	15.1	17.8	14.7	17.8	17.8	20.3	16.4	18.7

[1] In thousands.

[2] N's are listed in order of years experience, i.e., 31 women in the Humanities had 22 to 23 years full-time experience.

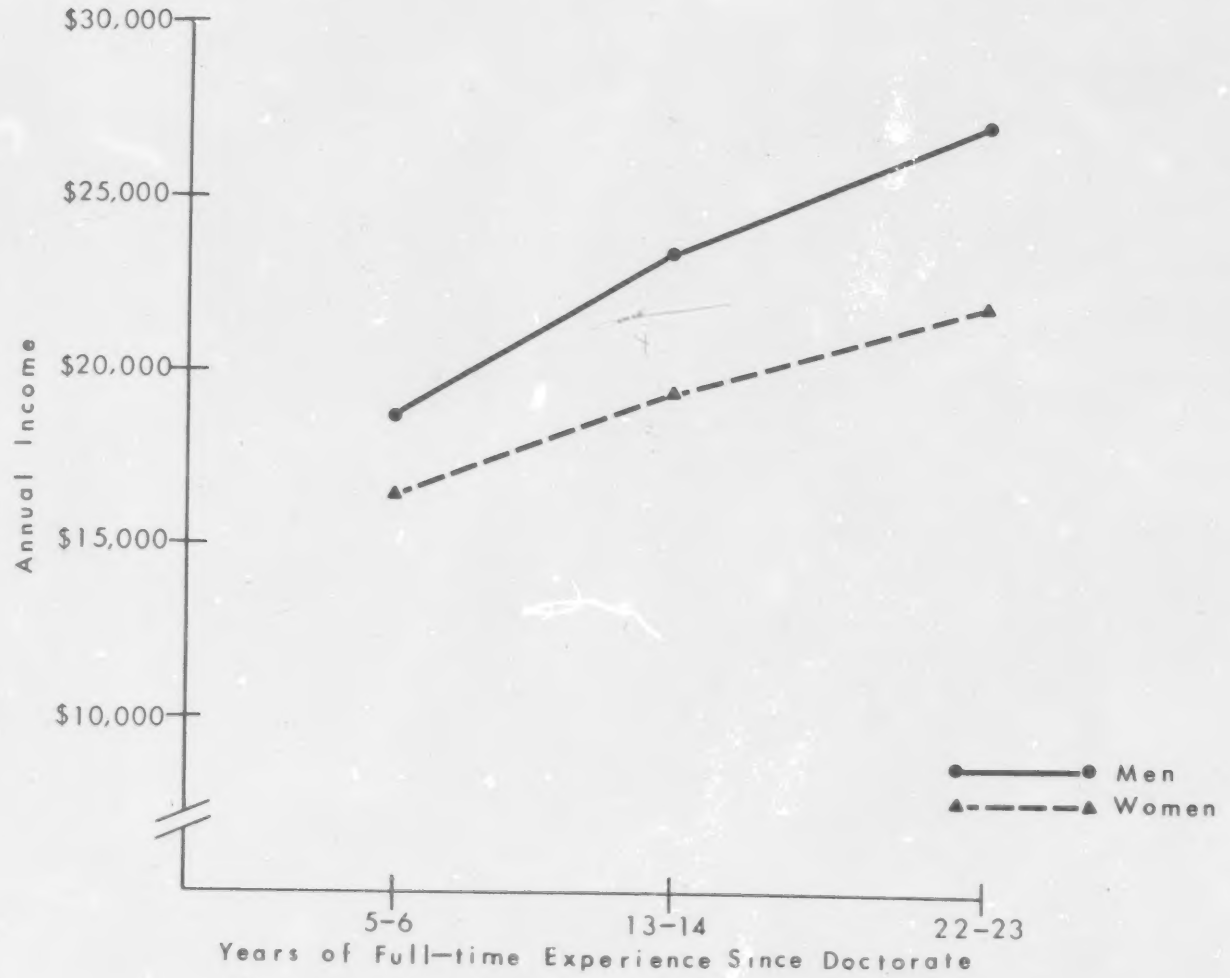

Fig. 5.3 Income by Years of Experience, All Types of Employment

Similar patterns exist in each of the five fields: that is, the disparity is fairly large for those with a little experience and becomes even larger for those with more experience.

This same pattern existed for those employed in universities as well (see Figure 5.4). Women doctorates employed in universities at the time of the survey earned an average of $22,500 after 22-23 years of postdoctoral experience (not necessarily all at a university). This was about $4,600 or 17 percent less than men with comparable experience. For women with 13-14 years of experience, there was a 12 percent difference, and women with 5-6 years of employment earned 11 percent less than men. Thus for university employed doctorates as well as for doctorates from all employment settings combined, women with the most experience had incomes farthest below those of men with an equal amount of postdoctoral experience. Once beyond the 13-14 year mark, women's incomes seemed to taper off while men's continued to increase at the same rate.

For doctorates employed at four-year colleges (see Figure 5.5), the disparity in income was, as in universities, greatest for those employed 22-23 years (16 percent). Women employed 5-6 years, however, earned only 7 percent less than men, a difference that could be accounted for by summer teaching or a second part-time job which men were more likely to hold.

Further disparities in incomes for those employed in colleges and universities are evident at each academic rank. As indicated in Table 5.6, men who were instructors, assistant professors, associate professors, professors, or department heads tended to have higher incomes than women at the same rank. And this was true at both colleges and universities.

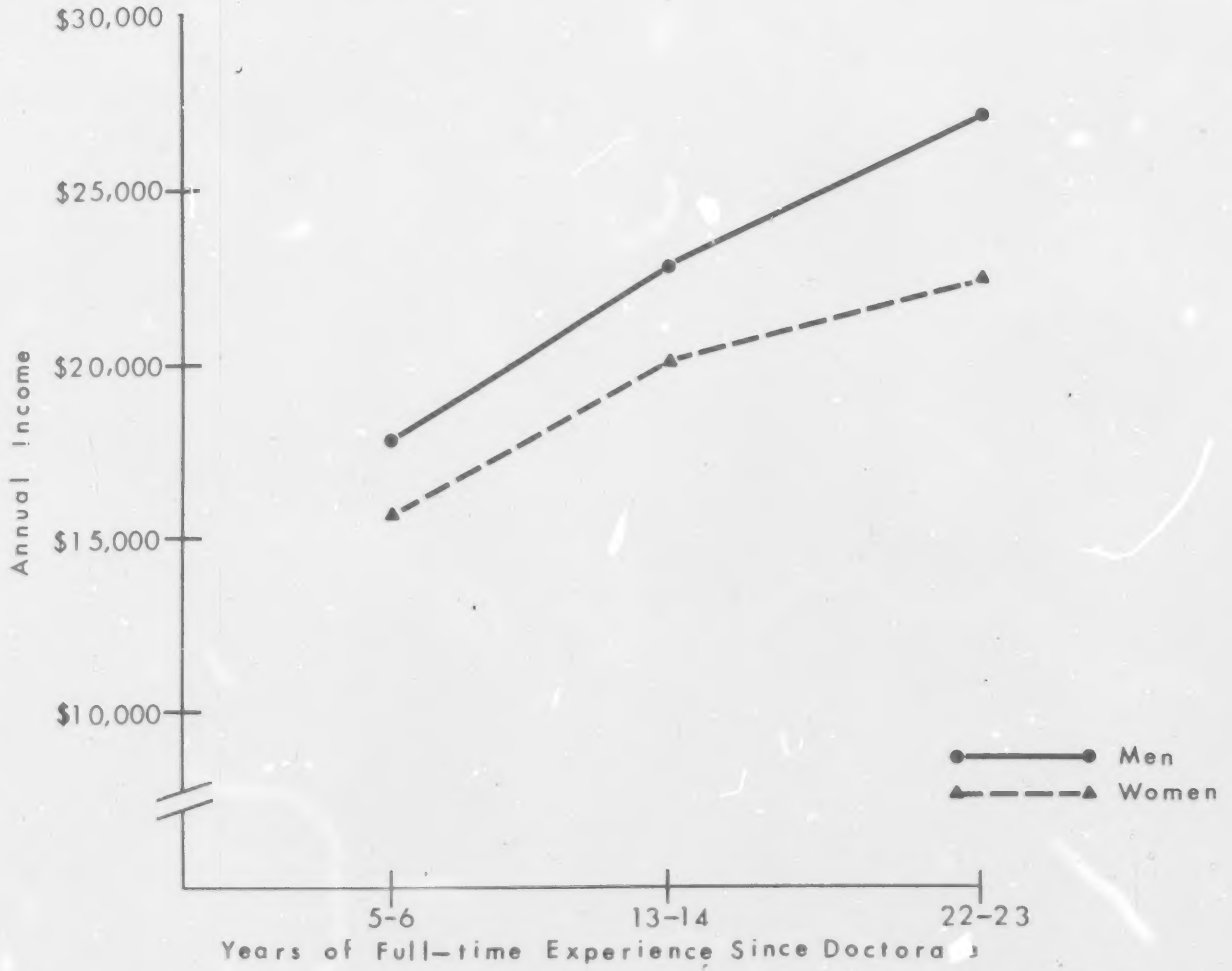

Fig. 5.4 Income by Years of Experience, for Those Employed at Universities

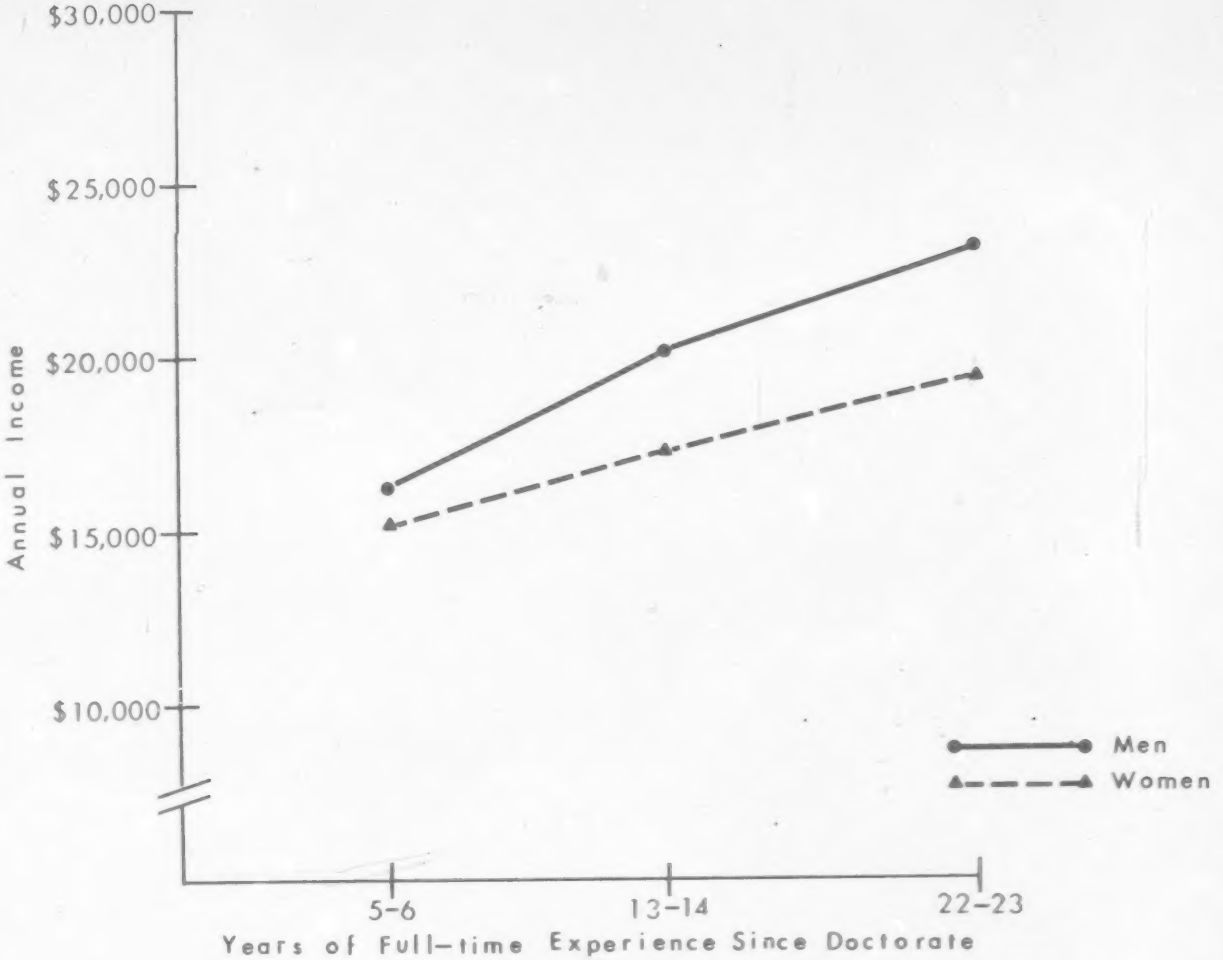

Fig. 5.5 Income by Years of Experience, for Those Employed at Four-year Colleges

It was also true, as Table 5.7 indicates, for men and women at each rank with an equal number of years in full-time employment. For example, at four-year colleges professors with 22-23 years of postdoctoral employment received an average of $20,600 if they were men and $17,800 if they were women. At universities, male full professors with 22-23 years experience averaged $24,100, women $21,000. At lower ranks similar disparities existed: male associate professors with 5-6 years experience received $1,600 more than women at universities and $1,100 more at colleges. Only assistant professors with 5-6 years experience, and who were currently employed at colleges, received equal salaries regardless of sex ($12,300).

Income for Doctorates in the Federal Government

For one employer in the study the disparity between men's and women's income was slight: the federal government. Women with 5-6 years of experience earned 5 percent less than men, while those with 22-23 years of experience earned only 3 percent less. Women with 5-6 years of experience (N=15) earned about $20,000, men (N=27) $21,000. Men with 13-14 years (N=20) averaged $29,000 as did those with 22-23 years (N=35). Women with 13-14 years (N=11) averaged $26,000 and those with 22-23 years (N=13) were up to $28,000. Quite likely these similar incomes for men and women are largely due to uniform civil service salary schedules for federal positions and, perhaps, more even-handed treatment of promotions.

Table 5.6

Current Annual Income by Rank

	Approximate Average Annual Income[1] For Those Employed at Four-Year Colleges	
	Women[2]	Men[2]
Instructor or lecturer	11.2 (67)	12.4 (39)
Assistant professor	13.6 (113)	15.0 (119)
Associate professor	16.5 (148)	19.5 (129)
Professor	16.6 (58)	19.1 (78)
Department head	20.0 (17)	22.7 (37)

	Approximate Average Annual Income For Those Employed at Universities	
	Women[2]	Men[2]
Instructor or lecturer	13.2 (127)	15.2 (102)
Assistant professor	16.2 (151)	17.5 (149)
Associate professor	21.0 (191)	23.2 (268)
Professor	20.6 (37)	24.2 (62)
Department head	26.9 (9)	28.3 (45)

[1] In thousands

[2] N's for each rank are given in parentheses.

Table 5.7

Current Annual Income by Rank According to

Number of Years in Full-Time Employment

	Approximate Average Annual Income[1] For Those Employed at Four-Year Colleges					
	5-6 Years[2]		13-14 Years[2]		22-23 Years[2]	
	W	M	W	M	W	M
Assistant professor	12.3 (44)	12.3 (33)	--	--	--	--
Associate professor	13.5 (56)	14.6 (86)	13.6 (16)	15.7 (15)	--	--
Professor	15.9 (19)	18.0 (24)	16.7 (44)	19.2 (39)	17.8 (23)	20.6 (39)
Department head	16.4 (18)	17.5 (20)	15.8 (18)	18.6 (22)	19.1 (9)	21.4 (17)
	For Those Employed at Universities					
	5-6 Years		13-14 Years		22-23 Years	
	W	M	W	M	W	M
Assistant professor	13.7 (83)	14.9 (92)	--	--	--	--
Associate professor	15.6 (58)	17.2 (82)	16.5 (41)	18.2 (33)	18.3 (11)	18.0 (15)
Professor	19.7 (15)	20.0 (8)	20.8 (47)	22.0 (74)	21.1 (70)	24.1 (117)
Department head	--	--	21.2 (10)	22.8 (26)	22.5 (11)	26.7 (18)

[1] In thousands

[2] N's for each rank for years of employment are given in parentheses. Blanks indicate the N was too small to compute a reliable figure.

Income Disparities Between Men and Women: Some Highlights
(Tables 5.5, 5.7, Figures 5.4, 5.5)

Disparity in Income and Length of Experience: The disparity between men's and women's incomes became greater with years of experience. Men's income varied from $18,700 for 5-6 years of experience to $27,100 for 22-23 years. Women's income varied from $16,400 to $21,800 for the same time periods. Similar patterns existed in all five fields, with the greatest disparities in the physical sciences.

Colleges: At the 5-6 year level, women earned 7 percent less than men, but at 22-23 years women earned 16 percent less than men. Only men and women assistant professors at the 5-6 year level had equal incomes. At all other ranks, men earned more, even when men and women had equal years of experience.

Universities: After 13-14 years of experience the difference was only 12 percent, but at the 22-23 year level, women earned 17 percent less than men. Women earned less at each rank and as department heads, even with equal years of full-time experience.

Private Companies: Men averaged $27,000, women $22,000. The overall average of $26,000 was about one-fourth more than doctorates in colleges and universities.

Federal Government: The disparity was slightest here. Women with 5-6 years of experience earned 5 percent less than men, while those with 22-23 years earned only 3 percent less.

Some Explanations for Income Disparities

Explanations for the decline in the rate of increase in women's incomes must be tentative due to the nonlongitudinal nature of the sample--that is, these were not incomes for the same individuals at three different stages of their career. Nevertheless, the magnitude of the differences for those with 22-23 years of postdoctoral experience (these would be men and women who have been employed full time since receiving their degree in 1950), would strongly

imply that women did not receive pay increments or job promotions comparable to those of men with similar credentials and experience. Indeed, most of the comments offered by women in the study who complained about discrimination were related to salary or promotion disparities. For example, one woman noted:

> As our department has grown in size my salary raises have been minimal, as the chairman feels the young men with growing families need the money more. There is considerable justice to this, so I have not complained, but of course, all of us could use the additional money.

Another woman noted about her university that:

> The number of women who hold full professorships, department chairmanships, and administrative posts other than Dean of Women is extremely small.

And from one with 23 years of postdoctoral experience (plus seven before receiving her degree) at the same university:

> Though I now have the rank of professor (after 30 years in the same institution), I have had that rank less than a year. I got the promotion and a salary raise of $3,300 only after fighting for them and with the help of people outside of my department. I am still the lowest paid professor in my department.

At institutions where publications weighed heavily in promotions and salary decisions, some women earned less because of a poorer publication record:

> I am able to do enough continuing research to support my teaching but do not seem to have the time or 'drive' to ready things for publication. My lack of promotion is apparently tied solely to this deficiency, not to sex. My salary was below par until pressure from the government caused a raise for most faculty women here. Now my rank limits future raises.

Other factors undoubtedly also contributed to income disparity. More men moved into higher paying administrative positions, or probably were offered jobs at institutions with a higher salary potential, or because of greater

mobility could gravitate to positions that paid more. Thus women tended to be employed at lower paying institutions, as in the case of the following:

> I am employed at a small southern public university, which for some years has ranked at or close to the bottom of the scale in the AAUP Annual Salary Survey. My salary is close to the average for my rank, so I cannot complain of discrimination on account of sex, but we are all well below the national average salary for this rank.

Finally, men were generally more likely to supplement their salaries with royalties, consulting activities, summer employment (for those on 9-10 month appointments), or a second part-time job. For example, a 1972 Survey of Psychologists by the American Psychological Association indicated that 33 percent of the men but only 19 percent of the women held both a full-time job and a part-time job (APA Monitor, 1973).

Recent Studies of Salary Disparities

Johnson and Stafford (1973) reported that the academic salaries of women Ph.D.'s started out fairly close to those of men (4 to 11 percent less in the six disciplines in their sample), and then failed to increase as rapidly as men's, so that 15 years after receiving the doctorate, women earned 13 to 23 percent less than men in college and university employment. Generally speaking, while affirmative action programs have apparently narrowed the salary gap between men and women, at least during the beginning and early years of employment, there still appear to be sizeable differences in annual income which could be due to one or more of the reasons already discussed. In fact, Johnson and Stafford's analysis, based on data from the National Science Foundation, indicates that sex differentials in gross earnings are much larger than those in salary. Attempting to explain why academic women's salaries failed to increase as rapidly as men's salaries, Johnson

and Stafford investigated how much of the differential reflected "(a) differences in acquired skill and productivity between men and women, and (b) direct labor market discrimination against women by male-dominated university faculties and administrations." Using the salary differential at the point of completion of the doctorate as a "discrimination coefficient," they concluded that over a 35 year work life about 40 percent of the wage disadvantage of women is attributable to discrimination and the remaining 60 percent to "human capital differences" (on-the-job training and number of years employed). The extent of discrimination in academic salaries can be debated because of the many variables involved; but that there has in the past been such discrimination is corroborated by at least one other large scale study (Astin and Bayer, 1972). Furthermore, Malkiel and Malkiel's (1973) study of the 1966-1971 salaries of professional employees of a nonacademic organization indicated that the answer to the question of salary discrimination depends on how narrowly one perceives the problem. In their study, men and women in equal job levels with the same characteristics (education, experience, productivity) got equal pay; but because women with the same characteristics as men tended to be assigned to lower job levels, they generally earned less than men.

Satisfaction with Job and Career

What aspects of a job are most satisfying to individuals with a doctorate, and do women view job satisfaction differently from men? What about the more general question of career satisfaction? As men and women doctorates look back, do they wish they had done things differently? These are some of the questions discussed in this section.

While the majority of the doctorates in the sample were satisfied with various characteristics of their current job, women tended to be less satisfied than men. This, at any rate, is the general conclusion to be drawn from Table 5.8, which indicates the percentages being very or somewhat satisfied with eight aspects of their current jobs. Only those who were currently employed full time are included in Table 5.8; the part-time employed will be discussed separately.

In particular, women were less satisfied than men with salary, advancement opportunities, their rank or status, job security, and policies and practices of their employer. For most of these job aspects there were differences between the sexes in all five fields, although discrepancies were greatest in physical sciences, biological sciences, and education. For the other aspects of their current job, including interaction with colleagues, the work itself, and overall satisfaction with the job, well over 85 percent of both women and men were generally satisfied. Evidently, in comparison to men, women are every bit as satisfied with the work they are doing and in how they get along with their colleagues; but they are less satisfied with some of the bread and butter aspects such as salary, rank, and promotions. As mentioned earlier in this chapter, over half of the complaints made by women in their open-ended comments were related to what they viewed as discrimination related to salary and promotions. The following comment by a 1950 woman graduate is typical:

> Looking back on the years of teaching and administration, I am well satisfied with my career and the work I did. However, I must admit that in the fifties and sixties, it was more difficult for a woman to achieve advancement within the department and the college. I did reach the associate professorship before retiring but I had to work harder, write more books, publish more articles, etc. than many a male colleague during that period.

Table 5.8

Satisfaction with Current Job, Full-Time Employed Only

Aspect of Current Job	Percentage Indicating Very or Somewhat Satisfied: Humanities W (N=248)	Humanities M (N=310)	Soc. Sci. W (266)	Soc. Sci. M (374)	Biol. Sci. W (236)	Biol. Sci. M (300)	Phys. Sci. W (137)	Phys. Sci. M (201)	Education W (456)	Education M (539)	All W (1343)	All M (1724)
Job security	81	86	82	87	72	86	66	83*	84	91	79	87*
Salary	63	73	73	75	69	80	68	77	70	82*	69	78**
Advancement opportunities	61	70	62	62	55	73*	46	62*	57	68*	57	67**
Your rank or status	78	89	79	85	70	89*	66	78	80	86	76	86**
Relations with colleagues	88	87	87	82	86	88	86	88	87	92	87	88
Policies and practices of employer	56	63	59	61	65	65	47	65*	61	71	59	65*
The work itself	92	90	91	92	86	96	93	88	92	93	91	92
Overall satisfaction with the job	86	88	87	89	85	93	78	90	88	92	86	90

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

Many men and women part-time employees, as Table 5.9 indicates, were less satisfied than full-time employees with salary, status, and promotions. A woman chemist employed in private industry complained:

> The company is apparently happy with . . . my work. They do not think I am serious, however, because they equate seriousness with 40-60 hours a week. They do not give me vacations, retirement, holiday pay, sick leave or any other fringe benefits. I'm sure I will not be eligible for a promotion as would be ordinarily expected.... They do not realize that I and many other women like me are willing to give them our best 30 hours a week, and probably accomplish as much as many of their 40 hour people.

Others, however, were satisfied with these aspects of their job or thought that such things as advancement opportunities or status were not applicable to them. Both men and women part-time employees were every bit as satisfied as full-time employees with such things as the work they were doing and colleague relations. At first glance this might seem unusual, but since many of those employed part time were teaching, it is understandable that for these particular aspects, they might be no less satisfied than full-time teachers. Finally, while the small number of men employed part time make comparisons between the sexes tenuous, there were nevertheless only minor differences between men and women employed part time in the degree of satisfaction with their current job.

Many of these women and men, it should be added, preferred part-time employment. Women who commented on this, such as the following, indicated that it gave them time for family and other activities.

> My history should not be interpreted as reflecting the domination of 'male chauvinist pigs.' It was my desire to have interesting part-time work without the time-consuming and energy-sapping duties of more responsible positions (several of which I turned down over the years).

> Although I have not taught full time all the time since receiving my degree, this has been my choice. My degree has given me the flexibility to teach as much as I wanted. Without a degree, I would not have been able to work on my terms--which provided time for my family's needs.

Table 5.9

Satisfaction With Current Job, Part-Time Employed Only

Aspect of Current Job	Percentage Indicating: Very or Somewhat Satisfied (V or SS), and Not Applicable (NA)*			
	W (N=167)		M (N=22)	
	V or SS	NA	V or SS	NA
a. Job security	46	15	55	5
b. Salary	52	6	50	0
c. Advancement opportunities	26	31	43	19
d. Your rank or status	53	13	64	14
e. Relations with colleagues	83	2	77	14
f. Policies and practices of employer	52	11	33	29
g. The work itself	92	1	91	0
h. Overall satisfaction with the job	84	1	83	0

*No significant differences between men and women

Career satisfaction. General career satisfaction was ascertained by asking respondents to indicate whether they wished they had:

Gone into another graduate field of study entirely?

Gone into a different specialty within their field?

Built a career with a different type of employer?

Not bothered to obtain a doctorate?

The data are given in Table 5.10. The number of men and women responding affirmatively to any of these questions was generally under 10 percent; those indicating that they were uncertain also numbered fewer than 10 percent (not given in Table 5.10). The greatest dissatisfaction was in the type of employer they had chosen (11 percent of the women and 10 percent of the men); only two percent wished they had not bothered to obtain a doctorate, although an additional 4 percent were uncertain about having obtained a doctorate. More women than men in the biological sciences (11 vs. 6 percent) would have preferred to have gone into a different specialty within their field, and more women in education (about 12 vs. 8 percent of men) wished they had built a career with a different type of employer. All in all, excluding those who were uncertain as well as those who responded negatively, over three-fourths of the doctorates thought they had made the right career decisions. Whether due to rationalization or genuine satisfaction with the way their careers have progressed, the conclusion to be drawn is one of general satisfaction for both the men and women doctorates.

Career satisfaction: recent vs. earlier graduates. The overall picture may be one of contentment with career, but the responses summarized in Table 5.11 strongly suggest that recent graduates are less satisfied than earlier graduates.

Table 5.10

Career Satisfaction, by Different Fields of Study and for the Total Group

	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education		All	
	W	M	W	M	W	M	W	M	W	M	W	M
	(N=310)	(N=335)	(388)	(398)	(315)	(314)	(190)	(214)	(585)	(609)	(1788)	(1870)
Looking back, do you wish you had:												
	Percentage Indicating Yes											
a. Gone into another graduate field of study entirely?	8.7	7.2	7.0	5.3	7.0	6.1	9.5	11.2	7.2	6.2	7.6	6.7
b. Gone into a different specialty within your field?	7.1	5.4	6.2	7.8	11.1	6.1*	10.5	9.8	9.1	10.2	8.6	8.1
c. Built a career with a different type of employer?	10.3	10.4	11.3	11.8	10.8	9.2	13.2	11.2	11.5	8.4*	11.3	9.9
d. Not bothered to obtain a doctorate?	1.3	1.8	1.3	1.8	1.6	1.9	3.7	2.3	1.5	1.8	1.7	1.9

*p<.05 Chi-square tests of significance of percentage differences between sexes

Table 5.11

Career Satisfaction, by Year of Degree

Looking back, do you wish you had:	1950 Graduates W (N=612)		1950 Graduates M (N=698)		1960 Graduates W (491)		1960 Graduates M (480)		1968 Graduates W (685)		1968 Graduates M (692)	
	Percentage Indicating Yes (Y) and Uncertain (U)											
	Y	U	Y	U	Y	U	Y	U	Y	U	Y	U
a. Gone into another graduate field of study entirely?	6.9	6.2	5.9	5.4	6.7	9.6	7.7	8.3	8.9	9.2	6.9	11.3
b. Gone into a different specialty within your field?	6.9	6.9	6.7	6.4	9.0	6.1	8.5	8.3	9.9	7.9	9.1	11.0
c. Built a career with a different type of employer?	9.6	7.4	7.2	9.0	10.6	11.0	10.0	10.4	13.3	10.9	12.7	12.9
d. Not bothered to obtain a doctorate	1.5	2.0	.9	3.0	1.0	4.9	1.9	3.1	2.3	5.3	2.9	6.5

While the differences are not enormous, both men and women 1968 graduates were more dissatisfied with their type of employer and the specialty they had chosen within their field. And more of the 1968 doctorates than the 1960 or 1950 groups said they wished they had not bothered to obtain a doctorate. This may be a trend reflecting dissatisfactions with a tighter job market, or perhaps it suggests that older, more established graduates are typically more content about their career decisions than younger, more uncertain graduates. The following comment illustrates this point:

> I've been very satisfied with my career but it must be remembered that I have had 24 years to come to a satisfactory adjustment. If I had answered this questionnaire within my first six to ten years of teaching, I am sure there would have been a reflection of much more turbulence.

In closing this section, one final point might be made. Career satisfaction is highly related to one's expectations and attitude toward professional advancement. Many women, Wolfle (1954) and Bernard (1964) noted on the basis of evidence from past studies, have lacked the competitiveness and "drive" for professional recognition demonstrated by many men. This attitude is probably best illustrated among some of the women in this study of doctorates by the following comment:

> My lack of competitiveness has been the despair of my feminist friends but the secret of my contentment. It is true that I was always underpaid compared to males giving the same service, but even that had its compensations in rewarding personal relationships.

This lack of competitiveness could be due to such diverse causes as early upbringing, societal expectations, and a defense reaction against sex discrimination. Whether these and other possible causes will change enough to make women, or at least women doctorates, more competitive remains to be seen. Increased competitiveness and greater expectations may not, of course, lead to a greater level of satisfaction.

Chapter 6

Marriage and Family Life

For many women doctorates, their professional careers were interwoven with their roles as wife and mother. This chapter examines some marital and family life characteristics of women and men doctorates, focusing in particular on the effects of marriage on career progress.

Marital Status

The women doctorates' marital status differed considerably from that of men's. In particular, as Table 6.1 indicates, more women had never married: about 39 percent of the 1950 and 1960 graduates, and 30 percent of the 1968 group (vs. only about 5 and 8 percent of men in the respective groups).[1] With fewer of the recent women graduates still single, in spite of having had a shorter length of time in which to be married, the trend appears to be clearly toward marriage for both women and men doctorates. Over three quarters of the men were married once only, while 35 percent of the women from the early time periods and just under half of the 1968 graduates were in that category. About a third more men than women from the 1950 and 1960 groups had been married more than once (just under 10 percent compared to a little over 6 percent of the women).

Divorce rate for women. In addition to the fact that women were less likely to marry, their divorce rate was much higher than men's. Of the 1950

[1] While not shown in Table 6.1, the percentage of single women varied from about a fourth of the social science and physical science majors to half of the education majors. Women in education also had the oldest average age at the time they received their doctorate.

Table 6.1

Current Marital Status

	Percentage Responding			
	1950 and 1960 Graduates		1968 Graduates	
	W (N=1112)	M (N=1185)	W (N=676)	M (N=685)
Married (once only)	35.0	78.5**	47.3	81.2**
Married (remarried)	6.3	9.5**	5.2	5.8
Separated	.8	1.4	1.6	1.0
Single (never married)	38.6	5.1**	30.0	7.6**
Single (divorced)	7.4	1.9**	8.4	2.9**
Single (widowed)	5.0	.9**	2.1	.4*
Single (member of religious order)	3.8	.8**	4.0	.1**
No response	3.1	2.1	1.3	.9

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

and 1960 group, about 8 percent of the women were divorced or separated and not remarried, compared to a little over 3 percent of the men. For the 1968 group, the figures increased to 10 percent of the women and 4 percent of the men. To put it another way, about one in four women with doctorates who had been married were currently divorced or separated (27 percent of the 1950-1960 group and 23 percent of the 1968 group). Only one in ten married men doctorates were currently divorced or separated.

High divorce rates for women doctorates have been noted in a number of previous studies (e.g., Astin, 1969; Bryan and Boring, 1948). There are undoubtedly several interrelated reasons for this. As one woman said succinctly: "It is difficult to contain two major careers and four children in one family."

While it is not possible to focus on any particular set of reasons, the data presented in Table 6.2 clearly show that women who were married before starting their degree were most likely to have been divorced, remarried, or separated (38 percent of the group). Only 14 percent of the men married at that point were not still married to the same spouse. Similarly only 14 percent of the women first married while earning their degree and 11 percent of those married after receiving their doctorate were divorced, remarried or separated (these being fairly comparable to the figures for men first married at that time). Of course one reason that there were fewer broken first marriages for women married while working on or after receiving their doctorate is that they have been married a shorter period of time. But that two out of five women first married before starting their doctoral degree would now be divorced, remarried or separated seems exceptional. In other words, over twice as many women as men who were married at that time were likely to have a broken marriage.

Table 6.2

Current Marital Status According to When Married

	Percentage Responding					
	First married before starting degree		First married while earning degree		First married after receiving degree	
	W (N=516)	M (N=1081)	W (N=293)	M (N=445)	W (N=223)	M (N=181)
Married (once only)	53	86**	83	89	84	85
Married (remarried)	17	11	5	5	2	7*
Separated	3 (38)	1 (14**)	1 (14)	2 (10)	1 (11)	3 (14)
Single (divorced)	18	2	8	3**	8	4
Single (widowed)	9	1**	3	1*	4	1

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

Several explanations might be given for this finding. Some women undoubtedly decided to work on their doctorate after marital separation. In that sense, the doctorate may have resulted in part from the broken marriage, rather than causing it. For other women, however, the doctoral work itself or the ensuing professional commitment undoubtedly created conflicts. Having been initially established in the role of wife, or of wife and mother, the new time consuming responsibilities of being a student or of pursuing a professional career can place a considerable strain on family life, particularly if the husband does not support and encourage the effort. One woman, who was not divorced, recognized this problem for other women:

> As a married woman, it was easier to work for my degree because I had the encouragement, cooperation and support of my husband. I think that this is a <u>problem</u> for many women who would like to work for a doctorate but who have husbands who object. I could not have completed a degree without a good deal of cooperation and sacrifice on my husband's part.

Support by her husband as well as by her family generally, then, would appear to be crucial to women who decide to pursue a doctorate after first having been established in marital life. Some, as Table 6.3 suggests, may not have found this support with their first spouse but did in a later marriage. Of the group first married before starting their degree who later remarried, 59 percent said their present spouse was more supportive of their career. In addition, 52 percent of this group married men with more education than their first husbands had. These percentages both exceeded ones reported by remarried women who had been married either while earning or after receiving their doctorate. Moreover, the responses for remarried men who had initially been married at one of the three different times, as can

Table 6.3

For Those Remarried, Comparisons of Present Spouse with First Spouse on Educational Attainment and Support of Career, by Time of Marriage[1]

	Time of Marriage					
	First married before starting degree		First married while earning degree		First married after receiving degree	
	W (N=54)	M (N=78)	W (11)	M (20)	W (5)	M (13)
Educational Attainment						
Present spouse has had:	Percentage Responding					
More education	52	54	0	55	40	62
Less education	24	20	18	35	40	0
Equal level	24	25	55	10	20	38
No response	0	1	27	0	0	0
	(N=54)	(N=76)	(8)	(20)	(5)	(13)
Support of Career						
Present spouse is:	Percentage Responding					
More supportive	59	45	38	30	20	61
Less supportive	4	8	0	0	0	31
Equal support	37	47	62	70	80	8
No response	0	0	0	0	0	0

[1]Only 1950 and 1960 graduates included.

be seen in Table 6.3, did not show this variation depending on when they were first married.[2] Evidently then, many women who started doctoral work after marriage and who were later divorced ultimately found husbands more supportive of their careers and with more education than their first spouses. Unequal levels of education, as well as the lack of career support, might therefore be an additional reason for the higher divorce rate among women who started their doctoral career after being married. The following comment by a married woman reflects a once strong resentment on the part of her nondoctorate husband toward her career:

> Changing times have changed my husband's attitude toward my working and he has just turned down a transfer to Puerto Rico because no job could be found for me; a few years ago he would have welcomed the excuse for me to have to start over again elsewhere.

When married. As indicated in Table 6.4, the proportion of women married before starting their doctorate was much larger for the later graduates. For the 1950-1960 graduates, 23 percent started work on their degree at some time after they were married; among 1968 women graduates, the proportion was just over 38 percent. For men, the proportions were fairly similar for both the early and later time periods, suggesting a definite trend toward more women starting doctoral work after marriage. This, coupled with the higher proportion of married women among later graduates, suggests that increasingly women have decided that they can pursue an advanced degree and a professional career after marriage; there appears to be less pressure to choose one role and exclude the other.

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[2]For both women and men who remarried, their present spouse had more education than their first spouse. Remarriage for both sexes, then, resulted in a spouse whose educational level was closer to their own.

Table 6.4

When Married in Relation to Receipt of Doctorate

	Percentage Responding			
	1950 and 1960 Graduates		1968 Graduates	
	W (N=1112)	M (N=1185)	W (676)	M (685)
First married before starting degree	23.1	56.6 **	38.4	60.0**
First married while earning degree	15.4	23.2 **	18.0	25.0**
First married after receiving degree	15.5	11.8 *	7.4	6.1
Never married or no response	46.0	8.4 **	36.2	8.9**

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

Of course, it should be pointed out that during the 1950's and early 1960's, there was a trend toward earlier marriages. Married graduate students were the rule rather than the exception, as indicated by the high proportion of 1968 doctorates who were married before or while working on their degree. In recent years, that trend would appear to have reversed itself; later marriages appear to be more common. Whether the current trend and life styles will affect the divorce-separation rates of doctorates, and in particular women doctorates, remains to be seen.

Children

Not surprisingly, married women doctorates had much smaller families than their male counterparts. In fact, about a third of the married women had no children (see Table 6.5). Typically men and women doctorates had 1 or 2 children, although 39 percent of the 1950-1960 men had 3-4 children and an additional 8 percent had 5 or more. Astin (1969) reported that women doctorates had an average of two children 7-8 years after their degree, compared to an average of 2.6 for women of the same age in the general population.

Most of the early women graduates (1950-1960 group), as Table 6.6 indicates, gave birth to their children after their degree was earned. By contrast, about half of the 1968 women gave birth to their children before their degrees were earned. While more of these women may bear children in the future, the contrast of childbirth in relation to receipt of the doctorate between early and later women graduates will undoubtedly remain. In summary, the marital and family patterns for more recent women doctorates--that is, those who obtained their degree in 1968--differed considerably from

Table 6.5

Number of Children[1]

	Percentage Responding			
	1950 and 1960 Graduates		1968 Graduates	
	W (N=640)	M (N=1120)	W (N=450)	M (N=640)
None	33	12**	30	15**
1 or 2	44	41	54	51
3 or 4	21	39**	15	29**
5 or more	2	8**	1	6**

[1]By birth or adoption

**p<.01 Chi-square tests of significance of percentage differences between sexes

Table 6.6

Birth of Children in Relation to Receipt of Doctorate

	Percentage Responding			
	1950 and 1960 Graduates		1968 Graduates	
	W (N=426)	M (N=998)	W (N=323)	M (N=552)
All born before degree earned	34.0	30.5	49.5	48.0
At least one born before, one or more born after degree earned	12.4	40.3**	17.3	30.4**
All children born after degree earned	53.5	29.2**	33.1	21.6**

**p<.01 Chi-square tests of significance of percentage differences between sexes

the earlier (1950 or 1960) graduates: they were more likely to marry, and they were more likely to start their degree after marriage and the birth of their children.

Spouse

Because of the importance of one's spouse in career development, particularly for women doctorates, information relating to such areas as occupational and educational background of spouses was elicited from the 1950 and 1960 graduates. (These questions were not asked of the 1968 graduates in order to keep the questionnaire short; they were instead queried about their graduate education.)

Employment and educational level. While 83 percent of the husbands of women doctorates were employed full time at the time of the survey, only 27 percent of the wives of male doctorates were so employed. How were they employed? Slightly over half of both women and men doctorates were married to individuals employed in an educational setting (see Table 6.7). Women, however, were more likely than their male counterparts to be married to "other professionals" (about 30 percent vs. 23 percent for men), or to have husbands who were managers of some kind, or who owned a business or farm. Finally, 9 percent of the men doctorates were married to women employed in "white collar, clerical or sales" positions; only about 2 percent of the women doctorates' husbands were in this category of employment.

But probably more illuminating than the type of employment is the level of education of their spouse. As indicated in Table 6.8, 63 percent of the women were married to men who had a doctorate or professional degree such as

Table 6.7

Current Employment of Spouse

	Percentage Responding	
	W (N=426)[1]	M (N=489)[1]
Which one of the following describes your spouse's current employment?		
Teaching, administration, or research in an educational setting	51.6	56.2
Other professional	30.3	22.7*
Managerial; owner of business or farm	8.2	3.5*
White collar, clerical or sales	2.1	9.0**
Skilled or semi-skilled worker	1.4	.6
Other	6.3	8.0

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

[1]The small N's are due to the fact that many male doctorates' wives were not employed, and that a relatively smaller proportion of women doctorates were married.

Table 6.8

Spouse's Educational Level

	Percentage Indicating Each Response	
	W (N=470)	M (N=1056)
High school education or less	4.5	8.7**
Some college	6.6	19.3**
Graduated from college	8.3	27.1**
Masters degree or some graduate school	17.6	36.6**
Earned doctorate or professional degree (Ph.D., Ed.D., M.D., LL.B., etc.)	63.0	8.3**

**p<.01 Chi-square tests of significance of percentage differences between sexes

in medicine or law. Only 8 percent of the men were married to women with a similar level of education, but then, of course a smaller proportion of women than men have currently obtained such degrees. Astin (1969) reported that 63 percent of her sample were also married to men with doctorates or professional degrees--51 percent with a Ph.D. or Ed.D. and 12 percent with an M.D., LL.B. or D.D.S.

Only 11 percent of the women but 28 percent of the men were married to spouses who were not college graduates. Reflected in these figures is the cultural pressure for women to marry men with equal or higher educational or occupational status, while men, for both psychological and numerical reasons (i.e., as previously mentioned, fewer women have advanced degrees) have traditionally married women with less education. Finally, some of the women's written comments on the questionnaire suggested that those with husbands who also had a doctorate tended to receive greater support and encouragement in their careers from their spouses.

Effect of spouse's job on career. Not surprisingly, 90 percent of the women doctorates' husbands had been employed full time during their marriage (see Table 6.9). Perhaps more surprising is that almost 4 percent of their husbands had been either unemployed, had worked part time, or had been employed full time less than half of the time. Only 12 percent of the men doctorates were married to women who had been consistently employed full time, and almost a third of their wives had essentially never been employed during their marriage.

These employment patterns during marriage plus the tendency for the husband's career to come first would explain why half of the women doctorates

Table 6.9

Extent of Spouse's Employment During Marriage

	Percentage Responding	
	W (N=470)	M (N=1058)
Which one of the following describes your spouse's employment during your marriage?		
Has been employed full time all or almost all the time	90.4	12.1**
Has been employed full time more than half the time	6.0	11.0**
Has been employed full time less than half the time	1.7	30.0**
Has had part-time employment	1.1	16.2**
Very little or no employment	.8	30.7**

**p<.01 Chi-square tests of significance of percentage differences between sexes

found their husband's job a major deterrent to considering employment in another community (see Table 6.10). Only 4 percent of the men found their wife's employment a major deterrent. Among married women doctorates, then, frequently their professional careers not only had to compete with domestic responsibilities, but at least half were deterred by the geographical restraints represented by their husbands' careers. The problem of advancing two careers in a family, often compounded by anti-nepotism policies and other discriminatory employment practices, is undoubtedly not one that can be easily solved. Ideally, cooperative career decisions, such as described by the following woman doctorate would be the goal:

> I owe much of my opportunity to pursue an independent professional career to the consistent 'backing,' understanding, and encouragement of my husband. Fortunately he has always possessed the maturity to recognize that my professional activities detract in no way from his 'masculinity.' Additionally, his mobility in job opportunities has been predicated on the most desirable locality for each of us to pursue our careers.

Table 6.10

Extent to Which Spouse's Job Might Affect Career

	Percentage Responding											
	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education		All	
	W	M	W	M	W	M	W	M	W	M	W	M
	(N=87)	(N=187)	(143)	(233)	(71)	(166)	(60)	(108)	(97)	(313)	(458)	(1007)
To what extent has your spouse's job deterred you from considering a job that would require a move to another community?												
Major deterrent	59	4**	45	4**	58	1**	62	3**	30	5**	49	4**
Minor deterrent	12	8	11	12	13	5*	8	7	10	6	11	8
No deterrent	12	51**	17	54**	10	60**	15	59**	30	58**	17	56**
Not applicable to me	18	37**	27	30	20	34	15	31*	30	31	23	32**

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

Chapter 7

Graduate School Experiences and Reactions

Examined in this chapter are sources of financial support during graduate school, interaction with graduate school faculty members during and following graduate study, and problems related to doctoral study. In the last section of the chapter, the extent of employment immediately after receiving the doctorate and its possible effects on career development is discussed.

Awards and Assistance in Graduate School

Some kind of financial assistance had been given to a sizeable number of the doctorates, as can be noted in Table 7.1. Women were slightly more likely than men to have received a fellowship or scholarship while men were somewhat more likely to have been teaching assistants. Sixty-one percent of the women were awarded fellowships or scholarships for some part of their graduate education compared to 56 percent of the men. Forty-eight percent of the women were teaching assistants compared to, again, 56 percent of the men. Equal proportions of both sexes, about a third, were research assistants at some point in graduate school.

These sources of financial support varied somewhat for graduates of the three time periods, as can be seen in Figures 7.1 and 7.2. The proportion of both women and men who received fellowships or scholarships increased with time; for the 1968 group, 70 percent of the women and 64 percent of the men received awards. Reflected in this trend is the impact of increased money from government and other sources for various fellowship programs. As further noted in Figure 7.1, women doctors consistently received more of these awards than did men. Why was this the case? While there is evidence that women

Table 7.1

Awards and Assistance During Graduate School

	Percentage Indicating Yes											
	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education		All	
	W (N=310)	M (N=335)	W (388)	M (398)	W (315)	M (314)	W (190)	M (214)	W (585)	M (609)	W (1788)	M (1870)
Regarding your doctoral study experience:												
Were you ever a teaching assistant?	48	62*	41	51*	58	69	73	80	41	41	48	56**
Were you ever a research assistant?	14	13	44	42	47	57	59	52	21	26	33	35
Were you awarded a fellowship or scholarship for any part of your doctoral education?	69	59	62	57	74	71	71	70	46	41	61	56*
Was there a faculty member who took a special interest in your progress as a graduate student?	78	75	76	78	87	88	78	85	80	81	80	81
Was there a faculty member who took a special interest in your professional career after you earned the doctorate?	44	40	36	40	48	48	39	37	42	4[illegible]	42	42

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

doctorates enter graduate school with exceptionally strong academic and intellectual credentials (Astin, 1969; Creager, 1971), there is no evidence that they have received a disproportionately high or low share of the stipends for graduate study (Baird, 1974; Creager, 1971; National Academy of Sciences, 1968). Those who have received financial assistance, therefore, in addition to having especially strong potential are also apparently more likely to complete their doctoral work.

As indicated in Figure 7.2, the discrepancy between the proportion of men and women who received teaching assistantships had decreased somewhat by 1968. This was accomplished when the proportion of women on teaching assistantships increased from 45 percent in 1950 to 52 percent in 1968, while the proportion of men remained fairly constant at about 56 percent for each time period.

Men and women's perceived relationship with their graduate school faculty was another area studied. Of particular interest was whether there is justification to the complaint that faculty members in graduate schools seldom sponsor or show special interest in women candidates. According to the responses reported in Table 7.1, about 80 percent of both women and men said there was a faculty member who took a special interest in their progress as graduate students. These results were essentially the same for each of the five subject fields. Only about half as many respondents, however, thought a faculty member had taken a special interest in their professional career after they had earned the doctorate, with identical percentages for women and men (42 percent). Again, these results did not vary much by subject field.

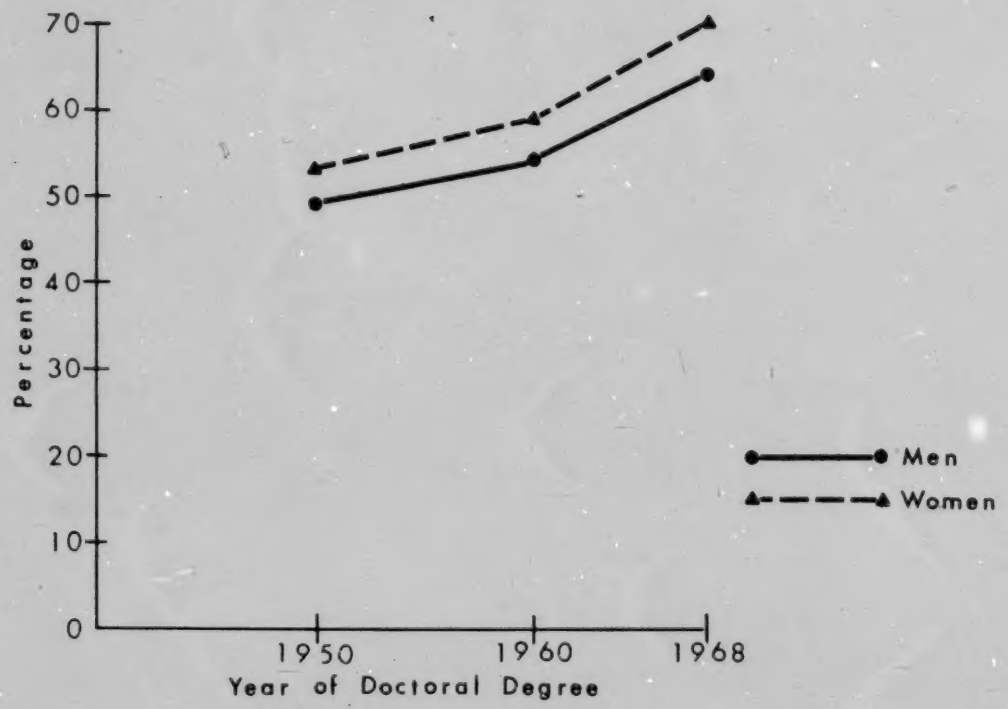

Fig. 7.1 Percentage Awarded Fellowships and Scholarships, by Year of Degree

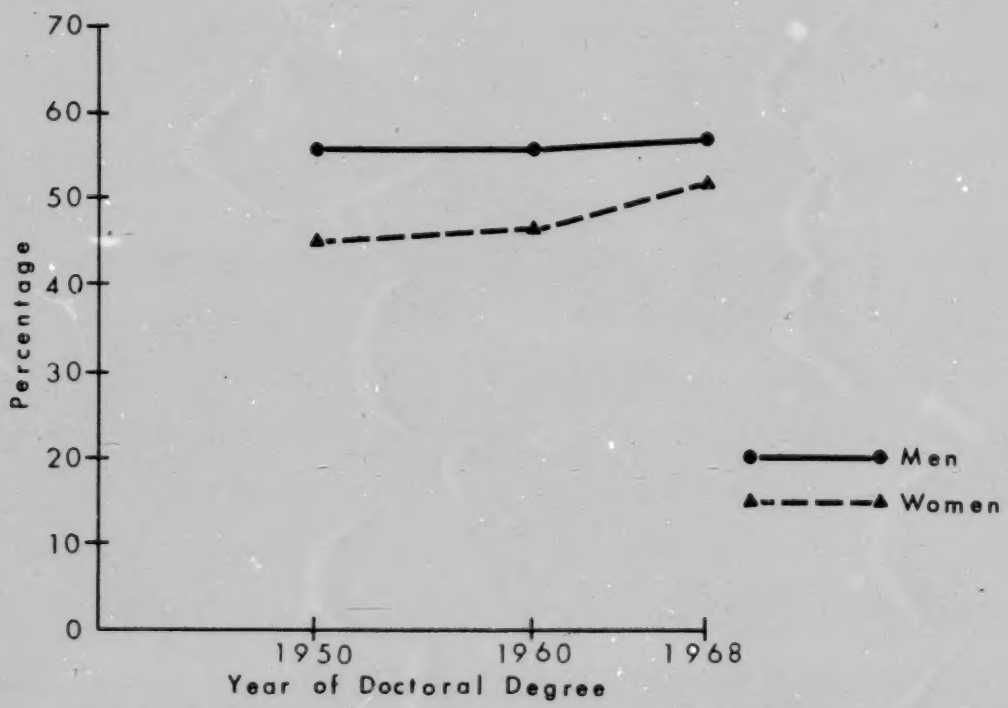

Fig. 7.2 Percentage Who Had Held Teaching Assistantships, by Year of Degree

Women, then, did not differ from men in their perceptions of the interest shown in them as individuals by at least one professor in graduate school. Several of their comments expressed their personal satisfaction with these student-faculty relationships. One 1960 woman graduate said:

> I have been very fortunate in having professors who interested themselves in my career and who have maintained that interest.

A 1968 woman graduate offered:

> I was fortunate to have several professors who were interested in my work (and still are). This has been very helpful when competing in male-dominated universities and colleges.

That both of these women considered themselves fortunate suggests that they may have witnessed instances when female classmates, many of whom may not have graduated, were not given much support by their professors. A few of the comments by women related dissatisfying experiences.

> I resent the lack of sponsorship from my professors in graduate school, although I did not recognize the lack at the time and was not aware that male students got more help.

* * *

> In graduate school, I and other women were subjected to disparaging remarks about how we would most likely run down the church aisle as soon as we had obtained our degrees, never publish, and never hold a job. While our professors were unduly pessimistic about the future, they at least did not disparage our capabilities. We were respected as much or perhaps more than most of our male classmates when it came to intellectual ability or clinical competence.

Some women mentioned a possible psychological effect of the scarcity of female professors:

> The most serious problem for female grad students remains the lack of acceptable role models on faculties.

Dissatisfaction with the rate and quality of interaction with faculty, in fact, had been noted in a 1969 ACE-Carnegie Commission survey of graduate

students from 153 institutions. For example, 21 percent of the men but 31 percent of the women thought that professors in their departments did not take women seriously, and more men (48%) than women (43%) said there was a faculty member to whom they could go for personal advice (Creager, 1971). Another recent study of this same sample of graduate students concluded that:

> Perceptions of the faculty as having negative attitudes toward women contributed to the emotional stress felt by at least one in three women doctoral students as well as decreasing their commitment to stay in graduate school. This relationship remained significant even after controlling for such factors as academic ability, financial worries, and family demands (Holmstrom and Holmstrom, 1974, p. 17).

It would seem therefore that women who had more negative experiences with graduate school faculty members were less likely to complete graduate study. Those who did obtain a degree, however, did not differ from their male counterparts in their retrospective views of the interest shown in them while in graduate school or after earning the doctorate. But, as will be discussed next, many of the women doctorates did feel that discrimination exists in graduate study and that it does discourage some women from completing their degree.

Problems Related to Graduate Study

To further investigate views toward doctoral study, a list of eight potential problems in graduate education was included in the questionnaire to the 1968 graduates. The 1950 and 1960 graduates were not asked to respond to this question, but instead responded to an expanded series of questions on married life.

Of the eight potential problems, only one was endorsed by over half of both women and men as a "very serious problem" for graduate education today:

the scarcity of jobs following award of the doctorate (see Table 7.2). Graduates in the humanities were most aware of this as a problem, with slightly over 80 percent identifying it as very serious, while doctorates in education were least concerned. Ranked as the second most important problem and selected by about a third of the doctorates was insufficient stipend support. Biological science majors were most concerned about this problem.

Approximately a fifth or less endorsed the remaining six problems as very serious, and among these there were only two in which men and women differed. Both dealt with sex discrimination. More women than men said sex discrimination in admission to graduate school was a serious problem (15 percent vs. 5 percent of the men); more women also said sex discrimination that discourages women from completing graduate work was a problem (23 percent vs. 10 percent of the men). With the possible exception of the biological sciences, women from each of the subject fields were more concerned than their male counterparts with sex discrimination in graduate school. Nevertheless, both women and men viewed sex discrimination in admission to graduate school as the least critical of the eight potential problems, a finding that generally concurs with Solmon's (1973) review of several recent studies of admission policies of graduate schools. Among the studies reviewed were those made by committees of the American Political Science Association, the American Sociological Association, and the American Psychological Association. In addition to these studies which focused on a single field, Solmon reviewed admissions information for two University of California graduate institutions (Berkeley and UCLA) published by the Coordinating Committee on Graduate Affairs, University of California. He did not find substantial differences in the treatment of men and women in graduate school admissions.

Table 7.2

Problems Related to Graduate Study[1]

	Percentage Indicating "Very Serious Problem"											
	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education		All	
	W (N=86)	M (N=96)	W (106)	M (117)	W (132)	M (116)	W (84)	M (80)	W (232)	M (242)	W (640)	M (651)
Insufficient stipend support	37	38	39	33	43	43	21	19	27	23	33	30
Impersonality of many graduate departments	33	22	28	36	18	16	11	8	19	26	21	23
Faculties who do not give time and effort to graduate teaching	19	18	29	28	23	14	18	11	23	23	23	20
Inappropriate content of graduate training for post degree jobs	28	17	27	23	21	20	32	26	17	22	22	22
Failure to provide teaching preparation	9	18	28	21	22	26	16	13	18	25	21	22
Scarcity of jobs following award of degree	82	81	60	53	66	63	69	61	35	46	57	58
Sex discrimination in admission to graduate school	11	4	22	10*	11	7	12	0*	17	3**	15	5**
Sex discrimination that discourages women from completing graduate work	27	16	34	13**	15	15	20	3**	22	6**	23	10**

[1]Only graduates of 1968 responded to this question.

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

The survey results further indicate that both men and women perceived sex discrimination as more of a problem after admission to graduate school than in the admissions process itself. As mentioned above, women were somewhat more aware than men of unsupportive or antagonistic faculty in graduate school and this too agrees with other recent findings (Fox, 1970; Holmstrom and Holmstrom, 1974).

Other aspects of graduate school which 20 to 25 percent of the men and women acknowledged as problems were: impersonality of many graduate departments (least likely in the physical sciences), faculties who do not give time and effort to graduate teaching, failure to provide teaching preparation, and inappropriate content of graduate training for post-degree jobs. A more detailed view of this last aspect is presented in Table 7.3, which gives for all doctors in the sample the percentage of their employment directly related to their field of study. About three out of four persons with doctorates had spent all or nearly all of their time in directly related employment; another 14 percent had spent half or more of their time in directly related employment. Women and men were about identical in their responses. However, about 6 percent of the women in the biological sciences had spent little or none of their employment directly related to their field; this exceeded not only men in biological sciences but women in other fields.

Professional Socialization During and Following Graduate School

The graduate school years and those immediately following award of the degree are said to be especially critical in an individual's career. In particular, the encouragement and advice given by members of the faculty can have a notable effect. While it has already been pointed out that men and

Table 7.3

Percentage of Total Employment Since Receiving Doctorate

Directly Related to Field of Study

	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education		All	
	W (N=310)	M (N=335)	W (388)	M (398)	W (315)	M (314)	W (190)	M (214)	W (585)	M (609)	W (1788)	M (1870)
All or nearly all	71.6	74.0	74.7	77.1	70.8	73.9	69.5	69.6	76.8	75.4	73.6	74.6
More than 50%	8.4	11.9	8.0	9.5	6.7	11.1	10.0	8.4	9.4	6.9	8.5	9.3
About half	4.5	4.8	3.9	4.8	5.7	4.8	4.7	6.5	4.6	4.9	4.6	5.0
Less than 50%	7.7	4.2*	4.1	3.0	6.0	6.4	10.2	11.7	3.6	7.4*	5.5	6.2
Very little or none	3.5	3.0	3.9	2.5	5.7	1.3**	2.6	2.3	3.1	2.5	3.7	2.4
No response	4.2	2.1	5.4	3.0	5.1	2.5	3.2	1.4	2.6	3.0	4.0	2.6

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

women doctorates perceived about the same amount of faculty interest in them as individuals, some women did feel that they had been ignored or given little attention as graduate students. Is there some relationship between treatment by faculty and employment following graduation, or are employment decisions by women determined largely by personal circumstances? The results presented in Table 7.4 suggest that personal factors are likely to have a greater influence. Presented in the table are percentages of women who said a faculty member took a special interest in them either as a graduate student or after earning the degree for (1) women employed full time following graduation, and (2) those employed part time or not at all for one or more years. Only 1950 women graduates working full time at the time of the survey were included in this analysis. The expectation that those who received more attention by faculty would more likely be employed full time after receiving the degree was not upheld. Statistically, there were no significant differences in the responses, although if anything, more of the part-time/not employed women reported favorable reactions from the faculty than those employed full time. Apparently such personal factors as marital status and husband's employment have a greater effect on employment following award of the degree than special interest by one or more graduate school professors.

The years following award of the doctorate might be expected to be especially important in laying the foundation of a professional career. Are women who are not employed following completion of their degree, or only employed part time, at a particular disadvantage in the long run? To investigate this question, women who graduated in 1950 and were employed at the time of the survey were divided into those employed full time following graduation

Table 7.4

Extent of Employment Following Doctorate
and Perceived Interest by Doctoral Faculty

Questions relating to perceived interest:	Women Currently Employed Full Time Who Graduated in 1950	
	Employed full time following graduation	Employed part time, or not employed for one or more years following graduation
	Percentage Indicating Yes[1]	
	(N=322)	(N=58)
Was there a faculty member who took a special interest in your progress as a graduate student?	82	95
Was there a faculty member who took a special interest in your professional career after you earned the doctorate?	49	47

[1] Chi-square tests of significance of percentage differences between sexes not significant

and those employed part time or not at all for one or more years. Differences between these two groups on total years of employment, rank, and publications are presented in Table 7.5.

Women employed full time after earning their degree were employed an average of 20.5 years, or about 50 percent more than those not employed full time following graduation. These added years of employment would probably explain why a few more had reached the rank of full professor (54 percent vs. 47 percent), and also why they had published more articles. Actually, the average number of publications per year was very similar for the two groups, with both averaging slightly over one. But while 3 percent of the full-time-following-graduation group had become deans or presidents, none of the comparison group had done so. There are, then, some long-term conditions associated with not being employed full time immediately after receiving the degree, but they do not appear as dominant as expected. One additional condition, not shown in Table 7.5, is that a larger proportion of those not employed immediately after receiving their degree tended to spend their eventual work years in jobs not directly related to their field of study.

Table 7.5

Years Employed Full Time, Current Rank, and Number of Publications for Women Employed Full Time vs. Not Full Time Following Graduation

	Currently Employed Women Who Graduated in 1950	
	Employed full time following graduation	Employed part time, or not employed for one or more years following graduation
Average number of years in full-time employment	N=326 20.5	N=60 13.0
Current rank:		
Percentage who are full professors	N=260 54	N=45 47
Percentage who are deans or presidents	3	0
Number of publications:	N=329	N=60
Median	8	4.5
Average	16	10.5

Chapter 8

Attitudes Toward Women's Rights

In this chapter men and women with doctorates are compared on their stance toward social movements to increase women's rights and opportunities. Although only one question was included in the survey on this topic, many respondents commented at length to clarify their position. A number of these comments are included to illustrate the several viewpoints held by both men and women. Selected characteristics of women actively involved in increasing women's rights are also discussed, along with the educational and employment background of the wives of males with doctorates who reported active involvement. Finally, early and recent graduates are compared for trends in attitudes.

Attitudes Toward Women's Rights and Opportunities

Attitudes regarding women's rights and opportunities were assessed by asking individuals to respond to a five-point scale ranging from active involvement ("I spend a great deal of time...") to being opposed. Women, as might be expected, were somewhat more actively involved than men: 25 percent of the women and 17 percent of the men said they spent either a great deal or some time and effort working to increase women's rights and opportunities (see Table 8.1). Most actively involved were women in the humanities and social sciences, followed closely by those in the physical sciences.

Just under 2 percent of the men were opposed to increasing women's rights, and about 8 percent more were "not interested in women's rights, one way or another." Men in physical sciences (14 percent) followed by

Table 8.1

Attitudes Regarding Women's Rights and Opportunities

Which one of the following statements regarding women's rights and opportunities best describes you?	Percentage Supporting Each Statement											
	Humanities		Soc. Sci.		Biol. Sci.		Phys. Sci.		Education		All	
	W	M	W	M	W	M	W	M	W	M	W	M
	(N=310)	(N=335)	(388)	(398)	(315)	(314)	(190)	(214)	(585)	(609)	(1788)	(1870)
I spend a great deal of time and effort working to increase women's rights and opportunities	5.5	2.1*	6.2	2.8*	2.5	1.9	3.7	1.4	3.2	2.1	4.2	2.1**
I spend some time and effort working to increase women's rights and opportunities	22.6	15.5*	21.1	17.1	18.7	14.6	22.6	6.5**	21.2	16.4*	21.1	15.0**
I support most women's rights efforts, but I'm not actively involved myself	61.9	68.1	63.1	69.3	67.9	69.4	66.8	70.6	65.0	67.3	64.8	68.6
I'm not interested in women's rights, one way or another	5.8	6.0	5.7	6.5	4.4	7.6*	4.7	12.1*	6.2	9.9*	5.5	8.3*
I'm opposed to increasing women's rights	1.0	2.1	.3	1.0	1.3	1.6	0.0	1.9*	.5	1.6*	.6	1.6*
No response	3.2	6.3	3.6	3.3	5.1	4.8	2.1	7.5	3.9	2.6	3.7	4.3

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

those in education (11.5 percent) were most likely not interested or opposed. Interestingly enough, physical sciences has the fewest number of women doctorates, while education has the highest number, so it seems unlikely that opposition to women's rights is related to the number of women in a field. Overall, however, about 86 percent of the men were either involved in increasing women's rights or, more likely, supported most efforts (69 percent). A few men described the way in which they worked to increase women's rights:

> My contribution to women's progress came chiefly in my role as a university dean. I instituted an early special program for women in my organization and insisted that those working on it have equal rank, salary, etc.

> I'm not involved in a functional sense, but I see the problem quite clearly and when it came to making a departmental appointment this year, I was very insistent on appointing a woman if we possibly could (we did).

> As long as I'm department chairman, I'll attempt to recruit women into the program, sustain them through to successful completion, and support them in subsequent professional development.

Some men qualified or explained their position by indicating what they meant by supporting most women's rights efforts:

> I support some women's rights goals, specifically those related to 'equal pay for equal services', and 'more' employment opportunities, but not 'unlimited' employment opportunities.

A 1950 graduate said:

> I'm opposed to discrimination against women in employment and compensation; most of the other women's 'rights' demands appear either ridiculous or stupid--and I fear, tend to alienate me.

Among the comments by men opposed to women's rights efforts were the following:

> I don't agree with women's rights supporters that women in equal or equivalent positions as men contribute equally, even though they may be as qualified or more qualified technically or professionally. They have many minuses, namely emotional responses. This is a general appraisal and there certainly are exceptions.
>
> Furthermore, because of the uncertain tenure of women in their positions, often because the job is not essential to family support, it is to an employer's disadvantage to invest in them through promotions, job training, etc. Such investment yields a greater return if made in men.

A 1968 graduate said:

> I am opposed to women's rights only because I feel that the family and home will be a point of neglect. After child rearing years I heartily support such a concept. I find women associates most competent and able.

A 1950 graduate said:

> Advancement in any professional field must be based solely on ability; sex or color are wholly irrelevant.

And finally, some negative comments from men were directed at the "means," not the "ends" of the movement: "I oppose the tactics of the women's rights activists."

Women opposed to increasing women's rights, or who were not interested numbered approximately 6 percent. Those in this group who commented expressed a generally negative attitude toward the feminist movement or objected strongly to certain features:

> Women's lib has been carried to ridiculous lengths and I feel most of the activists have problems as evidenced by some of their extreme stands against men. It's getting quite boring.

A 1968 graduate said:

> I would support every person's rights and efforts to succeed on his own merits. To whatever extent I've come against sexual discrimination--it has been aggravated by the so-called 'women's rights' movement. I used to be

> accepted as a person of professional capabilities. Now I have to 'live down' every assertion made by, and stigmata produced by, the so-called women's rightists before my professional capabilities are considered.

Finally, a 1950 woman graduate who had received her degree when she was 46, and was currently retired but had been employed at a university, said:

> I'm opposed to the strident methods of those seeking women's rights. Yes--we earn less for equal work; there are always fewer in the important high-paid jobs. But I don't think that the Libs have the right approach. So, although I'm not really opposed to increasing women's rights, I am not in sympathy with what is being done. It will take much more patience and hard work for women to establish their position in a man's world. Now they only increase the antagonism.

Most women, as with men, supported women's rights efforts but were not actively involved themselves (65 percent). Several, however, qualified their support:

> By 'most women's rights efforts,' I mean most of the goals (equal pay, equal opportunity, recognition, inclusion in policy making--not abortion on demand). I also do not mean most of the ways used by some groups to secure their goals.

A 1968 graduate wrote:

> I am for women's rights in employment, legal situations, etc.--but can't support some of the Women's Lib issues at all.

Ninety percent of the women were either working for women's rights or supporting most efforts. Those actively involved included some who worked on organizations or committees:

> I devote much time to my collateral duty as Federal Women's Program Coordinator and organize regional meetings.

A university professor said:

> I have been actively involved in working with our administration (as chairman of a committee appointed by the administration) for equal employment of faculty and student women.

Most women, however, considered themselves actively involved in a more personal sense:

> I do not belong to any organizations involved with women's rights..., however, I do consider myself involved with supporting these efforts on a personal basis.

Characteristics of Women "Activists"

What else can be said about women actively involved in women's rights efforts? To shed some light on this question, women who said they spent either a great deal or some time working to increase women's rights (responses 1 and 2), were compared to women who responded otherwise (i.e., not involved, not interested, or opposed). The two groups were compared on years of full-time employment, number of publications, salary, rank, and their satisfaction with eight separate aspects of their current job (for example, salary, relations with colleagues, policy and practices of employer, the work itself). Comparisons between the groups were made for the 1950-1960 graduates combined and for the 1968 graduates separately.

For both the earlier and the later groups of graduates, there was one characteristic which discriminated the actively involved women from others: they were more dissatisfied with the policies and practices of their employer ($p<.05$).[1] For the 1950-1960 graduates, women actively involved were also more dissatisfied with their current salary ($p<.05$), although their actual salary did not differ in the least from women who were not actively involved. While there were no other characteristics on which the two

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[1] T tests of significance were run for each of the 12 variables for the 1950-1960 groups and the 1968 groups, for a total of 24 tests.

groups of women differed significantly for either of the time periods, women actively involved did publish more; they reported 14 to 20 percent more publications than the noninvolved groups.[2] Dissatisfaction with salary for some women in the 1950-1960 group may then have been based on what they considered inappropriate remuneration for their publications record.

Generally, it would seem that women with doctorates who are actively involved in increasing women's rights are satisfied with most intrinsic aspects of their jobs--for example, the work itself--but are unhappy about certain extrinsic features--policies and practices of the employer, and for many their salaries.

Men's Attitudes Toward Women's Rights According to Wife's Education and Employment

It might be expected that married men's attitudes toward women's rights would be related to what their wives do. And this appears to be the case, as the results in Table 8.2 indicate. Men's attitudes were somewhat associated with both their wives' educational level and employment during marriage. Specifically, 26 percent of the men whose wives had gone beyond a bachelors degree were actively involved in women's rights compared to only 14 percent whose wives had less than a college degree. Similarly, 5 percent of the men whose wives had gone beyond a bachelors degree were not interested or opposed to women's rights compared to 15 percent of those

[2]Because of the large variation in the numbers of publications among women within each group, the differences were not quite statistically significant at the .05 level ($p<.06$, $p<.12$).

Table 8.2

Men's Attitudes Toward Women's Rights and Opportunities, According to Wife's Educational Level and Employment Status, 1950 and 1960 Graduates Only

Attitude	Wife's Educational Level:		Extent of Wife's Employment During Marriage:	
	MA, doctorate, professional degree, or some graduate school (N=465)	Less than a college degree[1] (N=285)	Employed full time at some time (N=548)	Employed part time or not at all (N=485)
	(Percentages)		(Percentages)	
Spend a great deal, or some, time and effort to increase women's rights and opportunities	26**	14	22*	18
Support most women's rights efforts but not actively involved myself	69	71	70	72
Not interested, or opposed, to women's rights and opportunities	5**	15	8	10

[1] Includes "high school education or less" and "some college" responses.

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

whose wives had less than a college degree. For extent of employment during marriage, men whose wives had worked full time at some time were slightly more involved in women's rights (22%) than those whose wives had been employed part time or not at all (18%).

In interpreting these results, one explanation is that men are more actively involved in women's rights due to the direct or indirect influence of their wives' education and employment. That is, because these men are more aware of what they consider employment discrimination based on their wives' experiences, they become involved in reducing inequities. An alternative explanation, albeit probably less convincing, is that men who view women as equals tend to marry more independent women who are more likely to be employed. . . .

Trends in Attitudes Toward Women's Rights:
Early vs. Later Graduates

Men and women graduates from the three time periods expressed very different attitudes on women's rights and opportunities, as indicated in Table 8.3. While sex differences among the 1950 graduates were insignificant, men in 1960 and in 1968 were less involved than women in those years. In fact, as Figure 8.1 makes clear, with each time period women became increasingly active while men became decreasingly active. Among 1950 graduates, 20 percent of the men and women said they were active; for 1960 graduates, 25 percent of the women but 17 percent of the men were active; and for the 1968 group, 29 percent of the women but just under 14 percent of the men were active. Men had also become increasingly "not interested" in women's rights with each graduation time (see Table 8.3).

Table 8.3

Attitudes Regarding Women's Rights and Opportunities,

by Year of Graduation

Which one of the following statements regarding women's rights and opportunities best describes you?	Percentage Supporting Each Statement					
	1950 Graduates		1960 Graduates		1968 Graduates	
	W (612)	M (698)	W (491)	M (480)	W (685)	M (692)
I spend a great deal of time and effort working to increase women's rights and opportunities	3.4	2.7	4.1	2.3	5.0	1.4**
I spend some time and effort working to increase women's rights and opportunities	17.6	17.9	21.4	14.8*	24.1	12.1**
I support most women's rights efforts, but I'm not actively involved myself	66.8	65.8	64.8	69.4	62.9	71.0
I'm not interested in women's rights, one way or another	6.5	7.4	4.5	7.7*	5.4	9.7**
I'm opposed to increasing women's rights	1.0	1.3	.6	1.9	.3	1.7**
No response	4.6	4.9	4.7	4.0	2.3	4.0

*p<.05 Chi-square tests of significance of percentage differences between sexes

**p<.01 Chi-square tests of significance of percentage differences between sexes

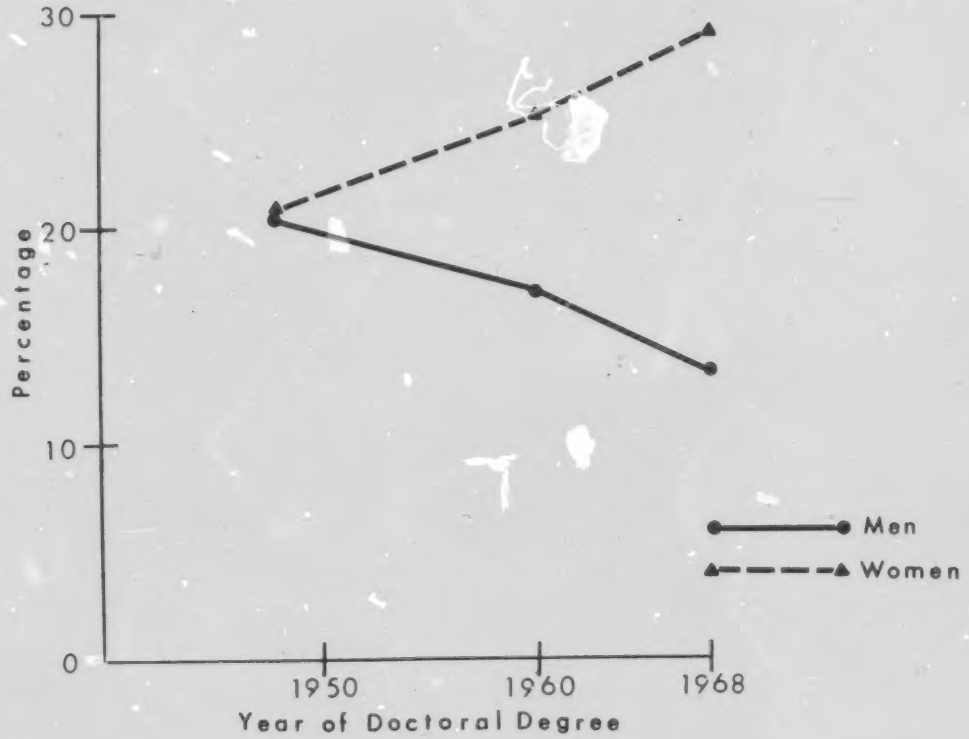

Fig. 8.1 Percentage Actively Involved in Increasing Women's Rights and Opportunities, by Year of Degree

One possible explanation for these results is that older men are in better positions to be involved in women's rights efforts. As administrators or department chairmen, they are making decisions or influencing policy related to women. Another explanation, however, is that of a backlash effect among male doctorates. The 1968 men are of course in direct competition with women for jobs. In a tight job market, men may be less concerned about increasing women's opportunities and more concerned with their own security. If this is so, then men who are currently entering the job market may be even less involved or sympathetic.

Highlights for Tables 8.1 through 8.3; Figure 8.1:
Attitudes Toward Women's Rights

Women in the humanities and social sciences were most actively involved in increasing women's rights

Men in the physical sciences and education were least interested in increasing women's rights

Twenty-five percent of the women and 17 percent of the men spend time working to increase women's rights

With each time period, women became increasingly active and men decreasingly active:

- 1950 -- 20 percent of both men and women active
- 1960 -- 25 percent of the women and 17 percent of the men active
- 1968 -- 29 percent of the women and just under 14 percent of the men active

Just under 2 percent of the male doctorates were opposed to increasing women's rights and 8 percent were "not interested"

Women who were actively working for increased rights liked their jobs, but were unhappy about extrinsic features--policies and practices of the employer, and in some cases, salaries.

Chapter 9

Summary, Discussion and Implications

How have the experiences and views of women with doctorates differed from those of their male counterparts? This was the general question that governed this questionnaire survey of 3658 men and women who received a doctorate (Ph.D. or Ed.D.) in 1950, 1960, or 1968. Included in the sample were doctorates from almost every major institution that has awarded the degree. Men were matched with women on field of study, institution that awarded the doctorate, and the year of degree. Slightly over 81 percent of those who received the questionnaire completed it and sent it back. A letter and telephone follow-up of a random sample of women non-respondents indicated that of those who received the questionnaire, unemployed women were less likely than employed women to respond.

The doctoral recipients questionnaire included items on employment activities and interests, job satisfaction, reasons for unemployment, income, publications, graduate school, marriage, and views on women's rights. In addition to the above, the questionnaire for the 1950 and 1960 graduates included an extended "Marital and Family Life" section, while the questionnaire for the 1968 graduates evoked reactions to a list of possible problems related to graduate study. Although the major purpose of the study was to compare men and women in all of these areas, the experiences and views of all doctorates, especially as they may vary by year of graduation and field of study, have also been presented.

The major findings of the study are summarized briefly below, followed by a discussion of some implications. The reader is encouraged to refer to the appropriate chapter for additional discussion of the findings.

Graduate School

Is there any justification to the complaint that faculty members in graduate schools seldom sponsor or give sufficient attention to women candidates? Women in this study did not differ from the men in their retrospective views of the interest shown in them by faculty members while in graduate school or after earning the doctorate. But these are women who had successfully completed their degrees. There is evidence from other studies that women who had more negative experiences with graduate school faculty members were less likely to have completed their doctoral program (Holmstrom and Holmstrom, 1974). Women doctorates were slightly more likely than men to have received a fellowship or scholarship in graduate school, while more men than women were teaching assistants.

Of eight potential problems in graduate education today, only one was emphasized by over half of the men and women 1968 graduates as very serious: the scarcity of jobs. Graduates in the humanities were most concerned about this as a problem, with over 80 percent identifying it as very serious. Both men and women viewed sex discrimination in admission to graduate school as the least serious of the eight potential problems, a finding which generally concurs with other studies (Solmon, 1973).

The Problem of Numbers

As noted earlier in this study, a relatively small proportion of doctorates (approximately one out of eight), has been awarded to women. To drastically increase the proportion, it is necessary both to increase the number of women applying to graduate school and for graduate faculties to be more supportive of women students. Sex discrimination in admission, according to the views of the doctorates surveyed in this study and according to other research results, is apparently not currently a major problem.[1]

Recent evidence suggests that more women are applying to and completing graduate school. The National Research Council's 1972 Survey of Earned Doctorates indicates that 16 percent of Ph.D. and Ed.D. degrees in that year were awarded to women. This represents a gain of almost 3 percent since 1970, which matches the increase in the preceding ten year period. Even more impressive are the 1973 survey figures: 18 percent of the doctorates were received by women in that year. And while the rate for men had decreased since 1972 (.3 percent), women increased by 15 percent in the one year. Moreover, the total number of doctoral recipients in 1973 increased by only 2.2 percent over 1972--the lowest rate of increase since 1960 (National Research Council, 1974).

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[1]This view is not, by all means, universally accepted. As Rossi (1973) and Cross (1974) have pointed out, many universities now apply an "equal rejection" theory to applicants. This means that women applicants are separated from men applicants and acceptances are based on the proportion of each sex applying. Because women generally have better academic records than men (Creager, 1971; Feldman, 1974; Baird, 1974), more women would be accepted if they were evaluated according to their credentials instead of a quota system.

Graduate enrollments also show an increase in women. In response to a recent survey, 208 Ph.D. granting institutions indicated that 37 percent of the graduate enrollment in 1973 were women, an increase of 2 percent in one year (Altman, 1974).

Women, however, are still not entering the physical sciences in large numbers. In recent years women have received less than 4 percent of the degrees in physical science. There is no evidence that this is changing very much. For example, at the University of Michigan women currently comprise half of the graduate students in humanities, but only 8 percent in the physical sciences (Chronicle of Higher Education, July 33, 1974). To some extent undergraduate faculty members and counselors may be able to encourage more women to enter scientific fields. The college years, however, may be too late to alter a young woman's career. Because of the particularly cumulative nature of learning in the physical sciences, it would probably be more important to counsel young women earlier in their lives--say in secondary school--to ensure that they enroll in the proper courses. Furthermore, attitudes about areas in which to excel undoubtedly begin in elementary school or sooner. A report on women in science and technology published by the Massachusetts Institute of Technology stressed the need for women's competence in mathematics and encouraged school administrators to "actively encourage girls to challenge the widespread and ill-founded belief that they cannot or need not learn to work with numbers" (Ruina, 1974).

To help increase the number of women who complete graduate school, there needs to be enough flexibility in graduate programs to allow for intermittent

study. The Panel on Alternate Approaches to Graduate Education (1973) recommended that "Course requirements, residence regulations, and other institutional requirements be adopted to meet the needs of students with family responsibilities . . ." A committee at the University of Michigan further recommended that special scholarships be set up by the graduate school for part-time and returning students (Chronicle of Higher Education, July 22, 1974).

Employment

Extent of Employment

On the basis of the employment history of each respondent, an average percentage of time in five categories--full-time employment, part-time employment, no employment, postdoctoral study, and retirement--was computed for women and for men. Women were employed full time an average of 78 percent of the time since obtaining the doctorate, compared to 95 percent for men. The 78 percent figure for women is probably slightly inflated because employed women more likely than unemployed women responded to the survey (as indicated by the follow-up of women nonrespondents). As a group, women averaged 9 percent of their time in part-time employment (vs. 1 percent for men), and were not employed 7.5 percent of the years, compared to less than a half percent for men. Both sexes spent similar percentages of time in postdoctoral study: 3.1 for women and 2.4 for men. But women averaged more time in retirement (2.2 percent) than men (.8 percent), largely because many had obtained their degrees later and were therefore somewhat older at the time of the survey.

Employment patterns for women varied from the 60 to 65 percent who worked full time without interruption since receiving the doctorate, to about one percent who had never been employed since receipt of the degree. About one-third of the women (40 percent of the 1950 graduates) had been interrupted in their professional careers, and either were not employed or were employed part time for a period.[2] Reasons for unemployment for women were largely related to marital and family life responsibilities, with about 57 percent of the occurrences falling into this category. Included among these reasons were pregnancy, no suitable jobs being available in their husband's locale, lack of competent domestic help or day care for children, and anti-nepotism policy of husband's employer. Another reason for unemployment cited fairly frequently by women (14% of the responses) was their lack of desire to work. In fact, a comparison of current employment status with preferred employment status indicated that about half of the currently unemployed women preferred to be unemployed. On the other hand, one in eight of the unemployed women would rather be employed full time and one in three would like a part-time position.

Then too, sizeable proportions of both women and men would rather be working less: 11 percent of the women and 8 percent of the men preferred part-time employment to their current full-time status. Typically, however, people were satisfied with the extent of their current employment. For example, 80 percent of the women working part time preferred that status, probably largely because of domestic responsibilities.

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[2]Interruptions in the careers of Astin's (1969) sample of women, during the 7 or 8 years following receipt of their degrees, averaged 14 months.

Are women doctorates employed enough to justify their training? The answer to this question would certainly seem to be yes, based on the percentage of time women were employed. And the number of women who had not been employed at all since receiving their degree was insignificant. Limiting the number of women admitted to graduate school because they might not justify the expenditure of time and money required for training appears unwarranted--especially in view of the current job market in which the quality of graduates is more important than the amount of time that some might be employed.

The fact that a third of the women doctorates interrupted their careers--usually because of marital and family life responsibilities--underscores the need for some kind of refresher courses or retraining for those who want to return to work. Graduate schools might therefore consider playing a larger role in the continuing education of Ph.D. recipients who have become somewhat outdated in their disciplines.

The number of both men and women who would prefer to work part time instead of full time (8 percent of the men and 11 percent of the women) suggests that employers may want to consider more flexible employment patterns.[3] Some older employees may find it desirable to spend a few of their pre-retirement years in part-time employment.

Type of Employment

What were those employed full time doing? Most doctorates were employed in colleges and universities. Two-thirds of the men and 70 percent of the

[3]A recent Carnegie Commission report (1973) recommended that men and women holding part-time appointments for family reasons be permitted to achieve tenure on a part-time basis, that fringe benefits for such individuals be prorated on the basis of the proportion of full-time employment, and that they be eligible for service on departmental or campus committees.

women were in four-year colleges or universities. A higher percentage of women than men held positions at four-year (non-doctoral granting) colleges and at two-year colleges; this was especially true of doctorates from the humanities and the physical sciences. But there appears to be a shift in this pattern, as evidenced by the higher proportion of recent women doctorates (i.e., 1968 graduates) than earlier graduates employed in universities. For men the opposite occurred: more men who graduated in 1968 than in earlier years were employed at four-year colleges, but fewer of the recent male graduates than those of 1950 or 1960 were employed at universities (i.e., 46 percent from 1950, 35 percent from 1968).

One interpretation of this change is that pressures to increase the number of women employed at universities have benefited recent graduates most. While some of the earlier graduates were at an age and in positions where a change may have been difficult, it is also unlikely that tenured or high ranking positions were offered to many women. A shrinking job market resulting in increased competition for tenured positions is one reason. Coupled with this is the point of view that qualified women are not yet available and that "pressures for discriminatory hiring to meet inflated goals" result in "reverse discrimination" (Lester, 1974). In a recent report critical of federally required affirmative-action programs, Lester argued that failure to allow faculties to choose the best available person for a tenured position would seriously undermine excellence at the major universities. The small number of women doctorates in some fields, as discussed earlier, has undoubtedly resulted in a limited pool of "qualified" women. In most fields, however, the data from the study reported here suggest that

there is a sizeable number of women doctorates with extensive university experience and publication records.

In addition to 4-year colleges, differences in the proportion of men and women with doctorates employed in two other settings were evidenced: more men (8 percent) than women (2.5 percent) were employed by private companies, and by the federal government (5.8 percent of the men vs. 3.4 percent of the women). This difference was especially true for graduates in the physical sciences: private industry employed almost 40 percent of the men in the physical sciences but only 10 percent of the women. Whether women have preferred to work in academe instead of private industry, or whether companies have been more reluctant to hire and promote women cannot be answered by the data in this study. If it is largely the latter, affirmative action programs would appear to be especially crucial in private industry.

Men and women differed somewhat in their current major job activity. More women taught--57 percent vs. 46 percent of the men--while more men were in administration or management (26 percent vs. 15 percent of the women). About 15 percent of both sexes gave research, scholarly writing, or artistic production as their major activity. These figures are comparable to the relative interest in teaching and research indicated by those doctorates employed at colleges and universities. Academic women were somewhat more interested in teaching than were men, and 5 percent of both sexes were heavily interested in research. A good many of these women, however, had research appointments without faculty status (about 4 percent of those at colleges and universities compared to less than 1 percent of the men). Furthermore, 26 percent of the men but only 19 percent of the women were leaning toward research as their primary interest.

While almost two-thirds of the women doctorates were at least partly interested in research, more women than men indicated a particular interest in teaching. This interest may of course reflect the fact that teaching was their major job activity. But it may also be due to societal or sex role expectations for women (Astin, 1969, suggested women preferred direct contact with people rather than dealing with the world abstractly; Bernard, 1964, referred to women's role as "conservators and transmitters of non-controversial knowledge"--see Chapter 4). At a time when colleges and universities as well as the public at large are concerned with effective teaching, the involvement and interest in teaching expressed by many women doctorates could make them especially worthwhile additions to hiring institutions. Furthermore, current efforts to emphasize instructional performance in determining promotions should reward those women (and men) who have spent most of their time and energy teaching students.

Further implications for future employment. Recent enrollment figures indicate that the phenomenal growth of American higher education that took place in the 1960s has tapered off (Peterson, 1972). Projections are for only modest growth during the rest of the 1970s and a decline in the number of students reaching college age by 1980. Because approximately two out of three doctorates are employed at a college or university, it is apparent that competition for academic positions, now intense in several fields, may increase enormously. The extent to which this will occur depends on two factors: the number of doctorates produced in the future, and the number of doctorates employed by business, industry, government and other non-academic enterprises.

For women doctorates, a tightening job market could mean resistance to equity in hiring practices. As Rossi (1973) stated:

> The readiness with which academic men translate the "goals" of affirmative action into "quotas" should be seen as nervous confusion as they face an uncertain future unlike their own past, and not simply as resistance to the legitimate claims of academic women. Had the feminist renascence taken place in the late 1950s, and were we developing affirmative action plans in the early 1960s rather than the 1970s, there probably would have been considerable support from the now protesting men since they would view women as a source of labor to ease the teacher shortage (p. 527).

Publication Rates

Men published more books as well as more journal articles than did women. The average number of articles published was 15 for men and 9 for women (the medians were 5.7 and 3.5). While the employment setting (e.g., non-profit research organization, federal government, universities) was highly related to publication rates, within each setting men published more than women, even after equating the sexes on the number of years of post-doctoral experience. Similarly, while there are large differences between such fields as physical sciences and humanities, men were still generally more productive than women within each field. The disparity in favor of men was still evidenced after only men and women interested in research were compared (again after equating for length of service), suggesting that women doctorates' greater interest in teaching does not totally account for lower overall publication rates.

Many reasons might explain the lower publication rates for women, including the greater likelihood of being employed in institutions which emphasize teaching, a preference for teaching, less time because of domestic

responsibilities (in fact single women and single men had similar rates), and less economic pressure to publish in order to increase income to support a family. Many of these factors appear to be changing, and to the extent that they do, women's publication rates might be expected to increase accordingly.

Income Differences

Income, which in addition to salary includes honoria, royalties and, for some, salary from a second part-time job or summer employment (for those on 9-10 month appointments), differed considerably for women and men. Women's average income for all types of employment varied from $16,400 for those with 5-6 years of experience to $21,800 for those with 22-23 years; men's varied from $18,700 to $27,100 for the same lengths of experience. Income differences between men and women were apparent in all five fields and in the various work settings. Men also earned significantly more than women who were at the same rank after the sexes were matched on years of full-time experience. For one employer, however, the disparity in income was less than 5 percent: the federal government. Quite likely these similar incomes for men and women evolved because of uniform civil service salary schedules for federal positions and possibly more even-handed treatment of promotions.

Income patterns, then, indicate slight differences in the early years in favor of men but larger increases with time. Similarly, one other study (Johnson and Stafford, 1973), has shown that academic salaries of women Ph.D.'s started out fairly close to those of men (4 to 11 percent less in the

six disciplines in their sample), and then failed to increase as rapidly as men's (15 years later women earned 13 to 23 percent less than men).

Several reasons can be given to explain income disparity. More men than women moved into higher paying administrative positions. More men were probably offered jobs at institutions with a higher salary potential, or because of greater mobility, they could gravitate to positions that paid more. Men were also more likely to supplement their salaries with royalties, consulting activities, summer employment, or a second part-time job. And finally men published more than women, and in many work settings one's publications record weighs heavily in determining rank and salary.

In view of these explanations, what portion of income or salary discrepancies, if any, is due to sex discrimination? While it is difficult to be exact about an amount or portion, the evidence from this study would indicate that women have not received pay increments or promotions comparable to those of men with similar credentials and experience. Other studies within the past 2 or 3 years also support the existance of some salary discrimination (Astin and Bayer, 1973; Johnson and Stafford, 1973; Malkiel and Malkiel, 1973). Nevertheless, comments made by many of the respondents in the study reported here suggest that recent salary adjustments for women are not uncommon. Current analyses of faculty survey data by Faia (Chronicle of Higher Education, August 5, 1974) also confirms a narrowing of the salary "discrimination gap." Using data collected in two American Council on Education surveys, Faia estimated that female faculty members earned about 2.5 percent less than males in 1973 (after equating the sexes on several relevant background characteristics), a decrease of 9.5 percent from the 12 percent

difference in 1969. The 2.5 percent estimate is probably somewhat conservative because some of the characteristics on which men and women were statistically controlled were themselves subject to discrimination (rank, for example). Still it does appear that institutions are beginning to close the salary gap.

Academic Rank

Proportionately more women than men doctorates held lower ranks--instructors or assistant professors--while more men were full professors or department heads. Moreover, analysis by years of experience indicated that men were promoted somewhat more rapidly than women.

Slightly more than 5 percent of the women and 11 percent of the men held administrative positions. But whereas two-thirds of these men were deans or presidents, fewer than half of the women administrators held such high-level posts.

Career interruptions and lower publication rates probably account in part for sex differences in promotions and rank, as they do with salary discrepancies. That may not be the whole picture. A Carnegie Commission report on Opportunities for Women in Higher Education (1973) suggested that "departments tend to take advantage of the fact that women have less bargaining power than men." Because married women had less mobility, they cannot easily take a better job at another institution, nor can they convincingly use a job offer to negotiate a promotion at their present institution. Furthermore, the report suggested that married women are frequently "secondary earners" and thus seen as less in need of salary or promotion increases.

Job Satisfaction

The vast majority of both women and men were satisfied with their current jobs, although women were somewhat less satisfied than men with certain aspects. Specifically, women were dissatisfied with such extrinsic features of their jobs as salary and promotions, in spite of some recent adjustments in these areas. Nevertheless, women were as satisfied as men with certain intrinsic features of their jobs, such as the work itself and relations with colleagues.

Marriage and Family Life

Women doctorates were less likely to marry than were their male counterparts. While less than 10 percent of the men had not married, 39 percent of the 1950-1960 women graduates and 30 percent of those who graduated in 1968 had never married. These figures also indicate that recent women graduates are more likely to marry than were earlier graduates. Combining roles as wife and professional (or as wife and graduate student), then, has become increasingly common among women doctorates.

Dual role responsiblilities for a good many women doctorates, however, has probably contributed to a divorce rate that was much higher than for men: one in four marriages resulted in divorce compared to one in ten for men. The divorce rate was highest for women married before starting their doctoral work (almost 40 percent). Some women undoubtedly decided to work on their doctorate after marital separation and in that sense the doctorate may have resulted in part from the broken marriage rather than causing it. For other women, however, the doctoral work itself or the ensuing professional commitment

probably created conflicts. Those who remarried, frequently reported husbands who were more supportive of their careers.

Traditionalists might point to the divorce rate for women as good reason to restrict doctoral study for women. But graduate schools would not be justified in rejecting women for marital reasons. As Cross (1974) pointed out:

> To oppose graduate educaton for a woman on the grounds that it is bad for her marriage, her chances of marriage, or her children is unwarranted and certainly an unacceptable role for the university (p. 40).

The professional careers of women doctorates were not only burdened by domestic responsibilities, but at least half were deterred by the geographical restraints represented by their husbands' careers. (Almost two-thirds of the women doctorates were married to men who had a doctorate or professional degree.) The problem of advancing two professional careers in one family, compounded by anti-nepotism policies and the lack of competent domestic help or day care for children, is not easily solved. Many institutions have done away with anti-nepotism; many have established or are considering day care facilities. These help but probably more critical is a spouse willing to make cooperative career decisions.

Women's Rights

Men's and women's stance regarding women's rights and opportunities were assessed by asking them to indicate the extent of their involvement or opposition. Women were more actively involved, as expected, but the differences were largely due to the attitudes of 1968 graduates. Men from the 1968 group were less involved and less interested in women's rights than earlier male graduates, while women graduates of 1968 were more involved than earlier women. More of the older men may spend time working to increase women's

rights by virtue of their positions as department chairmen or deans. It is also possible that recent male doctorates are in direct competition with women for jobs and may be more concerned with their own security rather than in increasing women's opportunities.

Not surprisingly the most active women tended to be those most dissatisfied with the policies and practices of their employers and, for older graduates, with their salaries.

The overwhelming majority of men--86 percent--were either involved in increasing women's rights or, more typically (69 percent), supported most efforts. Married men who were actively involved tended to have wives who had a college degree or who had worked full time at some time during their marriage. While this tendency was not strong, it suggests that many of these married men had become sympathetic with what they considered employment discrimination because of their wives' experiences, and had consequently become involved in reducing inequities.

Concluding Remarks

Women are far less likely to attend graduate school and once having acquired the doctorate are less likely to receive the rewards which their male colleagues enjoy. This portrait generally appears to have changed little over the past few decades, but there are signs--as some of the results of this study indicate--of recent gains. Whether current changes are the beginning of a trend or tokenism, as some claim, remains to be seen.

In viewing the experiences of women doctorates, it is not sufficient to think of them only as a single, homogeneous group. Their experiences and their contributions have varied greatly. The same, of course, can be said

of men. The award of the doctorate does not, by any means, annoint one with success or even ambition. Among the women, the data from this study suggest four types. The first group consists of those women who generally have worked full time since receiving their degrees and who have made a substantial and even unique contribution to their fields. A second type, who probably comprise the majority of women doctorates, includes those who have been employed full time all or a good part of the time since receiving their degrees, and who have generally performed competently--often as teachers. Their careers, however, have not been marked by frequent publications, new discoveries or national prominence. A third type consists of women whose professional careers have been marred by long or frequent interruptions, and who have consequently worked on the periphery of the employment scene, either in a part-time or full-time capacity. This group has comprised a small but not insignificant number of women--perhaps 15 to 20 percent. Finally, there are those few women who have not been employed or who have seldom made use of their graduate training. The data suggest that this is a fairly trivial number--probably well under 5 percent.

Cultural tradition, sex role expectations and discriminatory practices have been too important in determining these four types and the work history of women with doctorates. One can only hope that at some time in the near future ability, hard work, personal choice and perhaps good fortune will largely determine the careers of both men and women.

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APPENDICES

Appendix A
Form Letters Used
for the Study

Graduate Record Examinations Board
PRINCETON NEW JERSEY 08540 • AREA CODE 609 921-9000

IN AFFILIATION WITH
The Association of Graduate Schools
The Council of Graduate Schools

April 21, 1972

1971-72

S. D. Shirley Spragg
University of Rochester
Chairman

Michael J. Brennan
Brown University

Bryce Crawford, Jr.
University of Minnesota

Bernard W. Harleston
Tufts University

Joseph L. McCarthy
University of Washington

Robert H. McFarland
University of Missouri at Rolla

Lincoln E. Moses
Stanford University

J. Boyd Page
Council of Graduate Schools

Michael J. Pelczar, Jr.
University of Maryland

Richard L. Predmore
Duke University

Mina Rees
The City University
of New York

George P. Springer
University of New Mexico

Stephen H. Spurr
University of Texas at Austin

Allen F. Strehler
Carnegie-Mellon University

Donald W. Taylor
Yale University

Darwin T. Turner
University of Iowa

Herbert Weisinger
State University of New York
at Stony Brook

Dear Colleague:

A current interest of those of us who are involved in graduate education is that of the general status of women doctoral recipients. Recently the Graduate Record Examinations Board asked the Educational Testing Service to conduct a survey which would focus on the current activities and professional development of a sample of women doctorates. In order to obtain addresses for these graduates, as well as for a matched sample of men, we need your assistance.

Briefly, the study will include a sample of female and male graduates who received a doctorate in one of three time periods: 1949-50, 1959-60, 1967-68. Information on their views toward graduate training, patterns of interruptions or other obstacles to career development, problems encountered in their "professional socialization," and demographic characteristics will be among the areas covered in the study. Questions which are particularly sensitive or might be seen as an invasion of privacy--i.e., those dealing with sex, religion or politics--will not be included in the survey. Moreover, the identity of individuals and of their institutions will, of course, be kept confidential. A report based on the data collected will be made available to you upon completion of the study.

A random sample of 6700 doctoral recipients was drawn from the Directory of American Doctoral Dissertations. The only efficient source of addresses for these people is the university from which they received their degree. We, therefore, need your help in obtaining these addresses. Enclosed are two types of rosters--one, alphabetical and the other, by professional field. Would you forward these rosters, this letter and the enclosed memorandum to the alumni director or to other appropriate persons at your institution who could supply us with current addresses.

Please return the enclosed postcard indicating your willingness to participate in this project and naming the individual who will be completing the rosters. We would greatly appreciate your assistance with this crucial aspect of the study.

Sincerely,

S. D. Shirley Spragg

S. D. Shirley Spragg
Chairman

Enclosures

EDUCATIONAL TESTING SERVICE PRINCETON, N.J. 08540

Area Code 609
921 - 9000
CABLE-EDUCTESTSVC

Developmental Research Division

Appendix A

Form Letters Used for the Study

Memorandum for: DIRECTOR OF ALUMNI RELATIONS

Subject: GRE Board Study of Women Doctorates Date: April 21, 1972

Reference: Letter from Dr. S. D. Shirley Spragg dated April 21, 1972 From: John A. Centra Project Director

As indicated by the referenced letter, Educational Testing Service has been asked by the Graduate Record Examinations Board to conduct a national study of women doctoral recipients. Their current activities and professional development will be compared to a matched sample of men from the same professional fields and institutions.

We have obtained a random sample of graduates from the Directory of American Doctoral Dissertations, but we need your assistance in obtaining the most current addresses for those individuals in the sample who received their doctorate from your institution. Without your help in providing this information, this important study could not be undertaken.

Enclosed are two types of rosters which should facilitate looking up the information. One is an alphabetical roster with the professional field and year of graduation indicated for each person in the sample. In most instances, the year of graduation will be 1949-50, 1959-60, or 1967-68. The second roster includes these same individuals listed in alphabetical order within professional field. Please use the roster which is more helpful. We would appreciate your providing the most current address available for each graduate. The addresses can be written on the roster or may be submitted in any other form that is convenient for you. The information should be returned in the enclosed prepaid envelope.

The addresses will be treated as confidential and will be used only for research purposes. Each graduate on the list will be mailed a brief questionnaire. Their responses will provide the basis of a report which will be widely distributed to graduate schools.

Should you incur unusual expenses in providing this information, please contact us to discuss the possibility of financial assistance to help defray such costs.

If you have any questions about the study, please feel free to write or call:

Dr. John A. Centra
Research Psychologist
Educational Testing Service
Princeton, New Jersey 08540

Telephone: (609) 921-9000 ext. 2793

Graduate Record Examinations Board
PRINCETON NEW JERSEY 08540 • AREA CODE 609 921-9000

IN AFFILIATION WITH
The Association of Graduate Schools
The Council of Graduate Schools

March 15, 1973

Appendix A
Form Letters Used for the Study

1972-73

Michael J. Pelczar, Jr.
University of Maryland
Chairman

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May Brodbeck
University of Minnesota

William J. Burke
Arizona State University

David R. Deener
Tulane University

Wytze Gorter
University of Hawaii at Manoa

Bernard W. Harleston
Tufts University

Joseph L. McCarthy
University of Washington

Robert H. McFarland
University of Missouri at Rolla

Lincoln E. Moses
Stanford University

J. Boyd Page
Council of Graduate Schools

Richard L. Predmore
Duke University

Lorene L. Rogers
University of Texas at Austin

S. D. S. Spragg
University of Rochester

Allen F. Strehler
Carnegie-Mellon University

Donald W. Taylor
Yale University

Darwin T. Turner
University of Iowa

Herbert Weisinger
State University of New York
at Stony Brook

•

Maryann A. Lear
Secretary to the Board

Dear Colleague:

We would like to request your help in completing the enclosed questionnaire which is being sent to a sample of doctoral recipients. The information gathered will be used in a comparative study of male and female doctorates which is being conducted for the Graduate Record Examinations Board by Educational Testing Service. The primary purpose of the study is to examine the current activities, professional development, and personal experiences of women doctorates relative to those of men who received degrees in the same year and field.

Your name was selected randomly from the Directory of American Doctoral Dissertations, an annual publication. Selected from the directory were samples of the graduates at three different time periods: 1950-51, 1960-61, and 1968. Female and male graduates were matched by field, year of degree, and institution (or type of institution). This information, in fact, has been number coded at the top right corner of each questionnaire, thereby making it unnecessary for you to provide it again.

According to the pretesting, the questionnaire can be completed in less than 20 minutes. Please note that not all sections are applicable to everyone. In the event that you would like to comment beyond the options provided for each question, you are, of course, encouraged to do so. (Space is provided at the end of the questionnaire for additional comments.) Be assured that information in this questionnaire will be reported only in the form of statistical summaries and that individual responses will be kept strictly confidential.

We hope that you will find the questionnaire interesting and the study an important one. With your assistance, the results will contribute significantly to what is currently known in this area. A return, postage-paid envelope has been enclosed for your convenience. We would appreciate your returning the questionnaire at your earliest convenience. If you have any further questions concerning the study, please feel free to contact the principal investigator, Dr. J. A. Centra, at Educational Testing Service, Princeton, New Jersey 08540.

Thank you for your cooperation and participation in this study.

Sincerely,

Michael J. Pelczar, Jr.

Michael J. Pelczar, Jr.
Chairman

Graduate Record Examinations Board
PRINCETON NEW JERSEY 08540 • AREA CODE 609 921-9000

IN AFFILIATION WITH
The Association of Graduate Schools
The Council of Graduate Schools

Appendix A

Form Letters Used for the Study

1972-73

Michael J. Pelczar, Jr.
University of Maryland
Chairman

May Brodbeck
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Carnegie-Mellon University

Donald W. Taylor
Yale University

Darwin T. Turner
University of Iowa

Herbert Weisinger
State University of New York
at Stony Brook

Maryann A. Lear
Secretary to the Board

May, 1973

Dear Colleague:

On March 15 a copy of the enclosed questionnaire was mailed to a large group of doctoral recipients throughout the United States and Canada. Your name was in our sample, but our records indicate that we have not received a response from you. It is possible that the mailing never reached you--or, a busy schedule may have caused you to set it aside. If you have already returned the questionnaire, please disregard this letter. However, if you have not responded, we urge you to take 15-20 minutes to complete the questionnaire as soon as possible.

The purpose of the survey, which is sponsored by the Graduate Record Examinations Board, is to examine and compare the current activities, professional development, and personal experiences of women and men doctoral recipients. The graduates we are surveying are those who received their degrees within a year or so of 1950, 1960 and 1968.

We hope the questionnaire is of interest to you. We will be glad to send you a copy of the final report if you would like to receive one. Please indicate this interest on the comment page of the questionnaire.

Thank you for your participation in this study.

Sincerely,

Michael J. Pelczar, Jr.
Chairman

Please answer the following questions. (Write number of years)

1. Of the years since you obtained a doctorate, how many were spent in the following:
   a. Full-time employment..... _____
   b. Part-time employment..... _____
   c. Post doctoral study..... _____
   d. Not employed (on leave, unemployed, housewife, etc.)..... _____
   e. Retired..... _____
   f. Total (should equal years since doctorate was awarded)..... _____
2. What is your current employment status?_____

_____

3. Did you receive the survey of Doctoral Recipients Questionnaire this spring? ___YES ___NO ___?

Comments_____

_____

_____ Thank you

Postcard for Sample of Nonrespondents

1950-1960 graduates -- 29 questions
1968 graduates -- 24 questions (Questions 1-19 and first four questions of the marital life section were the same for both groups.)

GRE
BOARD

SURVEY OF DOCTORAL
RECIPIENTS

GRADUATE RECORD EXAMINATIONS BOARD

Survey of Doctoral Recipients

All responses given on this questionnaire will be strictly confidential. If, however, you object strongly to a question, you need not answer it. Space is provided on the last page for any comments you wish to make.

1. What is your sex? (Circle one)

Male	1
Female	2

2. What was your age when you received the doctorate? _____

3. How many calendar years elapsed between the time you received your bachelor's degree and the award of your doctoral degree? _____

4. Regarding your predoctoral work experience, approximately how many years were you employed professionally?

Number of Years	(Circle one)
None	1
1 or 2	2
3 or 4	3
5 or 6	4
7 or more	5

5. Regarding your doctoral study experience: (Circle one number for each question)

	Yes	No
a. Were you ever a teaching assistant?	1	2
b. Were you ever a research assistant?	1	2
c. Were you awarded a fellowship or scholarship for any part of your doctoral education?	1	2
d Was there a faculty member who took a special interest in your progress as a graduate student?	1	2
e. Was there a faculty member who took a special interest in your professional career after you earned the doctorate?	1	2

Employment

Questions 6-17 concern your employment since obtaining the doctorate. If you have not been employed at any time since you received the doctorate, check here ☐ and skip to question 18, page 4.

6. Of the years since you obtained a doctorate, how many were spent in the following:

	(Write number of years)
a. Full-time employment	_____
b. Part-time employment	_____
c. Postdoctoral study	_____
d. Not employed (housewife, unemployed, on leave, etc.)	_____
e. Retired	_____
f. Total (should equal years since doctorate was awarded)	_____

7. Approximately what percentage of your total employment (since receiving your doctorate) has been directly related to your field of study?

	(Circle one)
All or nearly all	1
More than 50%	2
About half	3
Less than 50%	4
Very little or none	5

8. Were you employed immediately after receiving the doctorate?

	(Circle one)
Yes, continued in full-time position I had while working on degree	1
Yes, other full-time (includes postdoctoral fellowship)	2
Yes, part-time	3
No, not for one or more years	4

9. What is your current employment status? (Respond in Column A) How much time would you prefer to be working? (Column B)

	(Circle one in each column) A Current	B Preferred
Full-time	1	1
Over half-time but less than full-time	2	2
Less than half-time	3	3
Not employed	4	4

10. From the following list indicate:
    a. your current employer or circumstance
    b. your first employer after award of doctorate.

	(Circle one in each column) Current employment	First post-doctoral employment
Not presently employed for pay	1	
Retired, don't expect to work again	2	
Four-year college that does not offer a doctoral degree	3	3
University that offers doctoral degree	4	4
Two-year college	5	5
Elementary or secondary school or school system	6	6
My own professional office or professional partnership	7	7
Self-employed in business	8	8
Postdoctoral fellowship	9	9
Private profit-making company	10	10
Nonprofit research organization or institution, not part of a university	11	11
Public or private welfare organization	12	12
Hospital or clinic	13	13
Federal government	14	14
State or local government	15	15
Church or religious organization	16	16
Other (Specify) _____	17	17

The following questions concern present employment. If you are not currently employed, skip to question 17 (bottom of page 3).

11. From the list below, select your current major job activity. If your job activity is not listed, write it in as "other."

	(Circle one)
Teaching	1
Research, scholarly writing, artistic production	2
Administration or management	3
Professional service to patients or clients	4
Other professional	5
White collar, clerical or sales	6
Skilled or semiskilled worker	7
Other (Specify) _____	8

12. Approximately how many hours per week do you spend both in your job and in professionally related activities?

Total _____

13. Rate your satisfaction with each of the following aspects of your current job.

	(Circle one number in each line) Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied	Not Applicable
a. Job security	4	3	2	1	0
b. Salary	4	3	2	1	0
c. Advancement opportunities	4	3	2	1	0
d. Your rank or status	4	3	2	1	0
e. Relations with colleagues	4	3	2	1	0
f. Policies and practices of employer	4	3	2	1	0
g. The work itself	4	3	2	1	0
h. Overall satisfaction with the job	4	3	2	1	0

14. What is your approximate annual income from employment and related professional activities (e.g., honoraria, royalties)? Include salary before deductions but without fringe benefits paid by the employer. (Circle one)

less than $5,000	1	$18,000 - $19,999	8
$5,000 - $7,999	2	$20,000 - $21,999	9
$8,000 - $9,999	3	$22,000 - $23,999	10
$10,000 - $11,999	4	$24,000 - $25,999	11
$12,000 - $13,999	5	$26,000 - $27,999	12
$14,000 - $15,999	6	$28,000 - $30,999	13
$16,000 - $17,999	7	over $31,000	14

15. If you are currently on the staff of a college or university, answer the following question. If not, skip to question 16.

a. What is your rank or position? (Circle one)

Research appointment without faculty status	1
Instructor or lecturer	2
Assistant professor	3
Associate professor	4
Professor	5
Department head	6
Dean or president	7
Other administrative position	8
Other (Specify) _____	9

b. Do your interests lie primarily in teaching or in research? (Circle one)

Very heavily in research	1
In both, but leaning toward research	2
In both, but leaning toward teaching	3
Very heavily in teaching	4
Neither	5

c. What are your teaching responsibilities this year? (Circle one)

Entirely undergraduate	1
Some undergraduate, some graduate	2
Entirely graduate	3
Not teaching this year	4

16. Looking back, do you wish you had: (Circle one number in each line)

	Yes	No	Uncertain
a. Gone into another graduate field of study entirely?	1	2	3
b. Gone into a different specialty within your field?	1	2	3
c. Built a career with a different type of employer?	1	2	3
d. Not bothered to obtain a doctorate?	1	2	3

17. Write your total number of publications in the following categories, using a zero for "none." Include any articles or books that have been accepted for publication but have not yet appeared.

a. How many books have you had published:

as a sole or senior author? _____

as junior author or as editor? _____

b. Approximately how many professional articles have you had published in journals or magazines (either alone or in collaboration)?

_____

The next question concerns possible reasons for unemployment during the time you have had a doctorate. If you have always been employed, skip to question 19.

18. If you are currently unemployed, circle (in Column A) the appropriate reason(s) from the list below. Do the same under Column B for any other periods of unemployment during the time you have had your doctorate.

(Circle all that apply in each column)

	A Current unemployment	B Other periods of unemployment
I did not receive an offer	1	1
I received an offer but I felt that it was not commensurate with my ability, training or interests	2	2
I received an offer but did not like the geographical location	3	3
No suitable jobs were available in the same locale as spouse's job	4	4
I was not employed because of anti-nepotism policy of spouse's employer	5	5
I was pregnant	6	6
I had poor health	7	7
I did not want to work	8	8
Spouse did not want me to work	9	9
I did not want to teach	10	10
I could not find competent domestic help or day care for children	11	11
I retired	12	12
Other (Specify) _____	13	13

19. Which one of the following statements regarding women's rights and opportunities best describes you?

(Circle one)

I spend a great deal of time and effort working to increase women's rights and opportunities	1
I spend some time and effort working to increase women's rights and opportunities	2
I support most women's rights efforts, but I'm not actively involved myself	3
I'm not interested in women's rights, one way or another	4
I'm opposed to increasing women's rights	5

Marital and Family Profile

20. What is your current marital status? (Circle one)

Married (once only)	1
Married (remarried)	2
Separated	3
Single (never married)	4
Single (divorced)	5
Single (widowed)	6
Single (member of religious order)	7

If you have never married, you may skip to the section reserved for comments, page 6.

21. How many children have you had (or adopted)?

(Circle one)

None	1
1 or 2	2
3 or 4	3
5 or more	4

22. When were your children born in relation to your earning the doctorate? (Circle one)

All born before degree earned	1
At least one born before, one or more after degree earned	2
All children born after degree earned	3

23. When is the first time you were married in relation to your earning the doctorate?

(Circle one)

First married before starting degree	1
First married while earning degree	2
First married after receiving degree	3

The remaining questions ask about your current spouse. If you are not currently married, skip to the section for your written comments on page 6.

24. What is your spouse's educational attainment level? (Circle one)

High school education or less	1
Some college	2
Graduated from college	3
Masters degree or some graduate school	4
Earned doctorate or professional degree (Ph.D., Ed.D., M.D., LL.B., etc.)	5

25. Which one of the following describes your spouse's employment during your marriage? (Circle one)

Has been employed full time all or almost all the time	1
Has been employed full time more than half the time	2
Has been employed full time less than half the time	3
Has had part-time employment	4
Very little or no employment	5

26. Is your spouse currently employed? (Circle one)

Yes, full time	1
Yes, part time	2
No	3 (skip to question 28)

27. Which one of the following describes your spouse's current employment? (Circle one)

Teaching, administration, or research in an educational setting	1
Other professional	2
Managerial; owner of business or farm	3
White collar, clerical or sales	4
Skilled or semi-skilled worker	5
Other (Specify) _____	6

28. To what extent has your spouse's job deterred you from considering a job that would require a move to another community? (Circle one)

Major deterrent	1
Minor deterrent	2
No deterrent	3
Not applicable to me	4

If you have been married more than once, answer question 29.

29. a. In terms of educational attainment, how does your present spouse compare with your first spouse? (Circle one)

Present spouse has had more education	1
Present spouse has had less education	2
Equal level of education	3

b. In terms of support of your career, how does your present spouse compare with your first spouse?

Present spouse is more supportive of my career	1
Present spouse is less supportive of my career	2
Both supported my career about equally	3

Please go to next page for comment section.

The next question concerns possible reasons for unemployment during the time you have had a doctorate. If you have always been employed, skip to question 19.

18. If you are currently unemployed, circle (in Column A) the appropriate reason(s) from the list below. Do the same under Column B for any other periods of unemployment during the time you have had your doctorate.

(Circle all that apply in each column)

	A Current unemployment	B Other periods of unemployment
I did not receive an offer	1	1
I received an offer but I felt that it was not commensurate with my ability, training or interests	2	2
I received an offer but did not like the geographical location	3	3
No suitable jobs were available in the same locale as spouse's job	4	4
I was not employed because of anti-nepotism policy of spouse's employer	5	5
I was pregnant	6	6
I had poor health	7	7
I did not want to work	8	8
Spouse did not want me to work	9	9
I did not want to teach	10	10
I could not find competent domestic help or day care for children	11	11
I retired	12	12
Other (Specify)_____	13	13

19. Which one of the following statements regarding women's rights and opportunities best describes you?

(Circle one)

I spend a great deal of time and effort working to increase women's rights and opportunities	1
I spend some time and effort working to increase women's rights and opportunities	2
I support most women's rights efforts, but I'm not actively involved myself	3
I'm not interested in women's rights, one way or another	4
I'm opposed to increasing women's rights	5

QUESTION 20-24: 1968 GRADUATES QUESTIONNAIRE

20. Listed below are some possible problems related to doctoral study. In general, how serious a problem do you consider each for graduate education today? (Circle one number in each row)

	Very serious problem	Moderately serious problem	Not much of a problem
a. Insufficient stipend support	1	2	3
b. Impersonality of many graduate departments	1	2	3
c. Faculties who do not give time and effort to graduate teaching	1	2	3
d. Inappropriate content of graduate training for post degree jobs	1	2	3
e. Failure to provide teaching preparation	1	2	3
f. Scarcity of jobs following award of degree	1	2	3
g. Sex discrimination in admission to graduate school	1	2	3
h. Sex discrimination that discourages women from completing graduate work	1	2	3
i. Other (Specify) _____	1	2	3

Marital and Family Profile

21. What is your current marital status? (Circle one)

Married (once only)	1
Married (remarried)	2
Separated	3
Single (never married)	4
Single (divorced)	5
Single (widowed)	6
Single (member of religious order)	7

If you have never married, you may skip to the section reserved for comments, page 6.

22. How many children have you had (or adopted)?

(Circle one)

None	1
1 or 2	2
3 or 4	3
5 or more	4

23. When were your children born in relation to your earning the doctorate? (Circle one)

All born before degree earned	1
At least one born before, one or more after degree earned	2
All children born after degree earned	3

24. When is the first time you were married in relation to your earning the doctorate? (Circle one)

First married before starting degree	1
First married while earning degree	2
First married after receiving degree	3

Please go to next page for comment section.

Additional Comments:

Please feel free to elaborate on any of your previous answers or to add anything else you consider important but which may have been overlooked in the questionnaire.

Thank you for your time and cooperation.

Please return questionnaire to:
Educational Testing Service
Princeton, New Jersey 08540

ATTN: J. CENTRA
R-227

Appendix C

WHAT THEY SAID: THE COMMENTS

Nancy M. Kuykendall

Introduction

This section presents a summary of what the respondents wrote on the last page of the questionnaire, the section which was left open for additional information or elaboration.

It is difficult to interpret voluntary comments. Once the researcher asks for free comment, the control of the data is relinquished to the respondent who makes the decision about what is important information to provide. The only framework for responses is that nebulous one of the general purpose of the survey and the questions in the questionnaire which trigger a reaction from the pen of the respondent. On the other hand, personal statements at the end of an objective questionnaire may endow a personal dimension to the survey. The mystical "N" becomes a French professor in a large college, a retired chemist, a young Ph.D., and more--all who had something unique to say about their professional experiences. Therefore, the purpose of this chapter is not to give a detailed data analysis but rather to represent as accurately as possible "what they said" in their own words.

The comments reported in this chapter represent approximately 600 respondents, both male and female, 400 who replied after the first mailing and 200 who returned the questionnaires after a follow-up letter. Each comment was read and coded by major category as well as by the specific stated concern. This exercise resulted in approximately 1000 specific comments which were grouped into one of six main categories. The main categories are listed below, and the percentage of comments in each indicates the proportionate sizes of each category:

Concerns Related to Being a Women Doctorate	51%
(Dual Role Responsibilities...43%)	
(Sex Discrimination...57%)	
The Women's Movement	7%
Men's Comments Concerning Professional Women	5%
General Comments Concerning Graduate School Experience	10%
General Comments Concerning Work Experience	14%
Other	13%
Total	100%

Each of the categories will be discussed in order in this section with the exception of the "Other" category. It was decided to omit this section because of the disparate nature of the information

reported here. The Other comments included a few suggestions for improving the questionnaire, chiding remarks about the relatively low female representation on the GRE Board, several nutshell autobiographies, and a large group of comments reporting the respondent's overall satisfaction with the professional experience.

Concerns Related to Being a Woman Doctorate

This category which represented the largest number of comments, contained problems and concerns specifically related to being a woman and having a doctoral degree. For the most part they were written by women and dealt with home-family responsibilities, employment- finding obstacles, discrimination by employers, and the like. The category is separated into two sections, the first entitled, Dual Role Concerns, and the second, Discrimination Problems.

Dual Role Concerns

Of all the categories these comments reflected the most frustration on the part of the respondents. Particularly in the academic setting, women seemed to feel at the mercy of their circumstances. One woman expressed the general problem quite succinctly:

> The major problem for a married woman with children--who also has a Ph.D. and is research oriented--is that her time, energy and attention have to be divided in so many ways.

Often women described a vicious circle: Women with young children sought part-time work. Men with full-time positions received the grants, published the research, and got the promotions. Then by the time women were able to return to full-time work, their field (or men in their field) had passed them by, and there was nothing to do but take the lesser jobs.

On the other hand, not all respondents were negative. Many preferred calling a halt to their careers to care for young children, were happy with part-time work, or had made their peace with the fact that their careers were secondary to their husbands'.

A woman who took fifteen years out to be at home with her five children expressed the feelings of this group when she wrote:

> I feel that I have had the best of both worlds. I enjoyed my doctoral and subsequent studies. I love teaching. I enjoyed bringing up my children, was then happy to return to teaching when the youngest was in the second grade. My

husband and children were glad to help me return to teaching, and they feel that my professional life makes me a better mother. It is true that if I had not had children, I should probably have had a more distinguished academic career. But it is an understatement to say that I have no regrets. For a great prize I have paid a small price.

Home-family responsibilities. Approximately one-fifth of the comments in this category had to do with home and family responsibilities. Most of these centered around the dual responsibilities of having both a profession and young children or, occasionally, the caring for elderly parents. The sentiments of the statements ranged on the one hand from frustration at having to neglect a career, to matter of fact acceptance of the situation, to the extreme of pride in the sacrifice of a profession for a "higher calling."

For many women the problems were present at graduate school. A woman who teaches political science offered this advice:

> I advise women to perservere and finish the Ph.D. before marrying and having children unless they find truly egalitarian mates who are willing to share housework and children, and otherwise compromise their plans to accommodate wives' interests.

A case in point was submitted by a scientist who received her degree at age 40.

> Our first child was born while I was still a student. Left college when husband had completed his doctorate. Not until youngest child was in school did I realize uninterrupted hours to complete my doctorate.

A larger group of women commented on the problems encountered as an employed professional with home responsibilities. This, from a sociology professor:

> The time scheduled in class or work is not as serious a problem as having to leave meetings, discussions and work on research at crucial points in order to be at home when children need supervision, help with homework or just their mother's attention. This lack of continuity and the need to be home results in a great deal of work done piecemeal or not completed. For example, I have several finished pieces of research and three or four papers that need time for preparing for publication but with classes, directed readings, committee work, thesis supervision and three children--your guess is as good as mine when they will be polished and submitted.

And from another college teacher:

> As a woman and mother I do not have the freedom to use nights and weekends for research as most professional men can easily do. In short, even in 1973, a professional woman must be willing to carry two full-time responsibilities, if she wants a career as well as a family.

And, from a school system employee:

> I envy the men with whom I work who go home to a meal prepared for them.

One very candid respondent who taught at a two-year college summed up the dilemma of many other women when she wrote:

> At any one time my (our) decisions were made carefully and with a wish to do the best for all concerned. Thinking back--'had I but known...' some of these decisions would have been different. Individuals differ (profound remark!). Speaking for myself, as I have come to know myself:
> 1) I should not have had 4 children. An only child, I did not know what a large family would be like, nor how much of me they would gobble up. (How did this happen? I think I was raped by the Ladies Home Journal.)
> 2) Perhaps I should not have married. This aspect is harder to evaluate than the effect of children, but both affect the fact that
> 3) I should have continued work--i.e., research--because there is no way to return to those most creative, early adult years in which knowledge is built upon the scholastic foundation. Marriage and one child might have been possible to combine with continuous career--but moot point now.

Several respondents mentioned the need for day care centers and suggested that these might allay some of the pressures on professional mothers. A 1960 graduate, a writer, reported:

> I believe that the lack of dependable, moderately-priced child care was a major deterrent while my children were young, and no tax benefits were available for the considerable sums I spent for such care. Furthermore, the anarchic vacation and holiday scheduling within the entire educational field at all levels makes it virtually impossible for a working teacher-mother to be free during the same weeks the children are free.

Some women respondents easily resolved the problem of combining home and professional responsibilities. A recent Ph.D. recipient stated simply:

> I feel, why be a mother if you don't like to or want to take care of your children?

And another 1968 graduate agreed:

> I have no regrets about not working until our children were all in elementary school. Mothers who have worked are having all kinds of problems with their children. A family that is unwilling to let one parent stay home with the preschoolers should not have children--raising a child should not be boring, but exciting and fulfilling.

A physiologist stated:

> Women can be just as good scientists as men--but men cannot substitute fully as mothers, pregnancy, nursing, etc. The problem of not depriving children of love and care in their earliest years prevents good mothers from having full-time demanding careers.

And, a social psychologist:

> As the first children grew older (plus the addition of 2 new ones) I felt that my role in the home took precedence over my professional role. The needs of my family were (and are) to me a major responsibility which I had consciously accepted, and to disregard them for my professional and personal advancement would be in the nature of an ego-trip. I have enjoyed both sides of my life and while I know I have not done all I could professionally, it boils down to a matter of priorities.

It is worth noting that throughout the comments on home and family responsibilities, there was the tacit assumption that the woman's place was, after all, in the home. Of nine respondents who reported having interrupted careers to care for elderly relatives, all were women. And, notwithstanding the numerous current articles in the growing collection of feminist literature which describe life styles where husbands and wives share equally the responsibilities of housekeeping and child rearing, the women who commented here reflected the more traditional values and modes. Many of them objected to the fact that the burden of the home rested on them, but few expected it to be otherwise.

Geographic location problems. Another common assumption made by women who commented (and presumably by the men who felt no need to comment) was that in a marriage, the man's career has precedence over the woman's. Therefore, some 14% of the comments in this category mentioned the problem of geographic restrictions for the woman. In some cases the husband has a good offer in a place where the wife could find no appropriate job. In others, the wife was offered a job, usually with a promotion, in another city. In both circumstances decisions were dictated by the husband's job. Perhaps there were many professional women in the sample whose careers had not been secondary to their husbands', but they were not the ones who commented. A typical comment was submitted by a 1960 Chemistry Ph.D.

> At the present time, I have a number of opportunities open to me that would mean professional and financial advancement, but my lack of mobility precludes taking advantage of them. The decision that we would follow the corporate gypsy path of my husband's career was made during our courtship after a great deal of thought. I have not regretted it, and I do not regret it now.

Part-time employment. Closely related to the problem of home responsibilities is the need for part-time professional employment. Ten percent of the comments in the category of women doctorate's concerns spoke directly to the part-time work dilemma. They talked about the need for part-time work for women with young families, the scarcity of suitable jobs, and the discrimination in pay and status.

The comments were all registered by women, and there was an undercurrent of feeling that part-time employment was an area of particular exploitation of women, especially in the universities. A 1968 graduate who has worked full time had this to say about part-time work in the academic world:

> Since the questionnaire seems concerned at least in part with sex factors in professional achievement, I would suggest that the most pressing need in that area is for greater flexibility in academic programs and arrangements, both during graduate study and during academic employment. A woman who works part time only (as I did not) during her years of "raising a family" still risks being considered less serious than her male colleagues. She is often, I find, more serious, having been obliged to overcome more obstacles all along the way; without seriousness, without commitment, she probably would never "make it" at all.

Another 1968 graduate who has not been employed full time since her graduation commented on the low esteem granted to part-time professionals:

> There should be greater flexibility with regard to working hours. There should be more effort made to accommodate mothers (or fathers) who want to continue their career but cannot always do so full time. The use of part-time people in universities is usually based on what the school needs at a particular time. Part-time employees are often held in low regard compared to their full-time fellow workers. They are hired and dismissed at the discretion of the school and they receive the worst teaching assignments.

Discrimination in part-time salaries was often mentioned. An education major stated:

> The biggest discrimination comes about by hiring women for part-time jobs and paying less than part-time [equivalent full-time] wages. Many employers seem to justify paying poor wages by offering part-time positions to women (when men hold equivalent part-time work they are generally called "consultants" and paid more) who are in positions from which it is difficult to say no.

And from another colleague in education:

> As a part-time employee, I receive no retirement benefits and no prorated leave benefits.

Several women challenged the idea that full-time work was always more productive than part time. For example, a 1968 graduate in biological sciences wrote:

> For those of us in the middle, who wish to spend time with our young families and do well in our work, we have a long way to go. Not many men can realize that 5-6 hours/day of concentrated effort produces as much if not more good research in that period than an 8 hour day.

And another 1968 graduate, a psychologist asked:

> Is there any <u>intrinsic</u> reason that one should have to work, say, 60 hours a week to make a real contribution? Or is this all just part of the "rat race syndrome"? If so, how could it be changed?

The university was not the only target. From a chemist employed by a company came a similar complaint:

> The company is apparently happy with...my work. They do not think I am <u>serious</u>, however, because they equate seriousness

with 40-60 hours a week. They do not give me vacation, retirement, holiday pay, sick leave or any other fringe benefits. I'm sure I will not be eligible for a promotion as would be ordinarily expected...They do not realize that I and many other women like me are willing to give them our best 30 hours a week, and probably accomplish as much as many of their 40 hour people.

Not all women felt the negative effects of part-time employment. Some preferred that option and were happy to have the opportunity. They valued their freedom for other activities and the lack of energy-sapping responsibility which they saw in full-time participation. Three women, two who had received their Ph.D.'s in 1960, and the other in 1968 submitted the following comments:

I have considered only part-time jobs in my teaching field because of responsibilities to my family and home. I have never considered trying to get a job anywhere except in the city where my husband worked.

. . .

My history should not be interpreted as reflecting the domination of "male chauvinist pigs." It was my desire to have interesting part-time work without the time-consuming and energy-sapping duties of more responsible positions (several of which I turned down over the years).

. . .

Although I have not taught full time, all the time since receiving my degree, this has been my choice. My degree has given me the flexibility to teach as much as I wanted. Without a degree, I would not have been able to work on my terms--which provided time for my family's needs.

Sex Discrimination

By far the most numerous comments in the category of concerns related to being a woman doctorate were those which dealt with various aspects of professional discrimination against women. Well over half the comments in the entire category mentioned sex discrimination, and when compared to other groups of comments in this chapter, the discrimination comments outnumbered the next largest categories by approximately 250 comments.

With these numerical comparisons in mind it is interesting to look ahead at the section entitled The Women's Movement and note the relative lack of involvement in women's rights activities registered by the female respondents. A frequency count in that section showed that only 14 women wrote of being actively involved in the women's movement while another 15 indicated "limited support" of certain aspects such as equal job opportunities, and 13 women expressed a

generally negative attitude toward the movement. Question 19 in the questionnaire gives more accurate information about how all the women in the study (and men as well) described their positions on equal rights and opportunities for women, but one might conclude after reading only the comments that awareness of sex discrimination has not lead to feminist activism, at least not for this sample of women doctorates.

The comments in this category, almost all of them (99%) from women, indicated that sex discrimination is pervasive. They suggest that a woman may meet some form of discrimination at every turn in her professional life. She may expect discrimination in admittance to graduate school, in treatment as a graduate student, in hiring procedures when she looks for a job, and even in her treatment by male colleagues in her work. A 1950 graduate who is employed by a company wrote:

> During my entire career, which includes working in academia, government, and industry--I have suffered every form of discrimination known to the human species because I am female. At the present time, my two male "supervisors" have only high school degrees.

Her frustration is resonant of the majority of her sisters who were concerned about sex discrimination. A 1968 graduate in the academic world commented:

> There are aspects of personal and professional status which are more often used against women than against men, i.e., coauthorship of articles, and marital status. Usually these discriminations are exceedingly subtle and difficult to combat.

And from two 1960 graduates:

> I sincerely believe that my full potential as a teacher and investigator has never, and will never, be fully realized because I am a professional women rather than a man. I have had neither the good job opportunities nor recognition of accomplishments in my present position. I am bitter about it all.
>
> . . .
>
> Looking back makes me wish that I had not done it. I had had the feeling that I was a second-class citizen because I did not have the doctorate. Now I know that it is the fact that I am not male.

On the other hand, not every woman who mentioned discrimination saw herself as victim. An occasional respondent such as this 1960 graduate protested:

> I have never felt discriminated against and have been the recipient of many special privileges because of being a woman. My promotion to full professorship was as rapid as that of my male colleagues.

However, the defenders were rare. Women were more apt to comment as did this writer on the subject of the power structure :

> The power structure especially in the national organizations is very difficult to penetrate--especially for women. There is a good deal of "old boyism" from which women are excluded.

Or on tokenism:

> Schools now want their "prize" woman on the faculty much as they once had a prize Jew or black.

Or on publishing:

> I find sending articles to publishers a disheartening experience; and of recent date, I am beginning to feel that women scholars' work is more difficult to get published than men's because I find that it is a fact that editors and editorial assistants are men.

On research grants:

> Research--I have had one large government grant for research and a very small one from the University. However, my college has not helped me with released time, as they do the men, to use for research and writing.

On being an outsider:

> I feel there is inadequate knowledge of opportunities, salaries, job descriptions, etc. generally. This is particularly true for women who tend to have less access to the grape vine.

On male colleagues:

> It is not so much the overt discrimination against highly intelligent, exceptionally qualified women that is to be feared. Much more dangerous is the covert discrimination practiced by many men who are afraid to see women progress professionally behind them...

> Men feel uncomfortable with women who are their equals or their superiors and can never bring themselves to admit that an individual female can be their superior--intellectually, in terms of having better credentials, and/or a better performance record.

And, finally, on equality:

> In order to get where I am as a woman I had to be best-at the top of the class. What I want for women is the right to be average--as average as the men are--and still succeed.

Discrimination in graduate school. Several (approximately 30) women wrote of sex discrimination encountered in graduate school. Some felt it began with admissions practices where unequal consideration of applicants was given. A few respondents suspected that in order to be admitted a woman had to be better than average academically, and even at that she might be asked if she planned to stick it out or if she might resign because of marriage or childbirth. And once in graduate school, these comments from different female respondents about a variety of personal experiences:

> I was not invited to apply for scholarships or fellowships, but I feel I was qualified.
>
> . . .
>
> One of my major professors did not believe women belonged in the professional department he headed; he would never give a women an A (even women who had straight A records in all classes).
>
> . . .
>
> I resent the lack of sponsorship from my professors in graduate school, although I did not recognize the lack at the time, was not aware that male students got more help.
>
> . . .
>
> My doctoral committee gave me a bad time during my interviews because they never really expected me to have the stamina and determination to see through the plan.
>
> . . .
>
> In graduate school, I and other women were subjected to disparaging remarks about how we would most likely run down the church aisle as soon as we had obtained our

degrees, never publish, and never hold a job. While our professors were unduly pessimistic about the future, they at least did not disparage our capabilities. We were respected as much, or perhaps more than, most of our male classmates, when it came to intellectual ability or clinical competence.

And finally, several women saw the graduate school problem in more psychological terms--that of the relative lack of female professors to serve as examples and mentors for female graduate students. As a biology professor in a university put it:

> The most serious problem for female grad students remains the lack of acceptable role models on faculties.

Discrimination in hiring. Once the hurdle of graduate school was over there were problems in being hired. This dilemma may be somewhat mitigated by the recent H.E.W. regulations, but women respondents, even as recently as the 1968 graduates, reported that the obstacles were present. The typical rationale of employers was presented in this comment from a language professor:

> Once I was being considered for an appointment as Chairman at another institution. During the interviews the conversation turned again and again to the question of what I would do about my family, whether my husband would join me in the new location, what he would do, whether the children would live with me. These matters seemed to be of greater interest and importance to my interviewers than the question of my competence and qualifications. Such questions put the woman on the spot, because she cannot point out their irrelevance without seeming to be cold and heartless in regard to her family.

A 1960 graduate with 13 years of full-time postdoctoral employment stated:

> It is even harder for a senior woman to find an appropriate job these days than a senior man. Only inexpensive women are sought after to fulfill H.E.W. regulations (an inexpensive investment for a good product).

And an associate professor who received her doctorate in 1968 said about her university:

> We interview men with "all but the dissertation" but only women who have received their Ph.Ds.

Discrimination in salaries. The majority (approximately two-thirds) of the discrimination complaints were registered by women who were employed and who reported male-female disparities in salaries and promotions. Although promotions and salaries may be two aspects of the same problem, they were often reported separately, and the respondents mentioned salary discrimination slightly more often than promotions.

The typical statement concerning finances was made by a university professor who received her Ph.D. in 1968.

> Employers still pay females less for equal services rendered at this university. Some even go so far as to say--you have a husband so you don't need as much. Nonsense -- a person should be paid for his ability and competen v regardless of his situation. Being a female does not stop people from asking me to serve on committees et al, but they expect me to be satisfied with less pay.

Her views were supported by many personal examples, such as:

> I found it worthy of concern that after 43 years of teaching, including a Ph.D. degree for the final fifteen years, that the young man who replaced me at the time of my retirement was given my final salary for his first salary.

And from another college professor with 21 years of full-time teaching:

> However, as our department has grown in size my salary raises have been minimal, as the chairman feels the young men with growing families need the money more. There is considerable justice to this, so I have not complained, but of course, all of us could use additional money.

And yet another female respondent:

> Salary is a bone of contention for me because the university gave higher starting salaries to one Ph.D. and one MD who were hired later than I and who essentially work for me.

Many women felt that being married, especially in the case of a professional couple, had contributed to unfair treatment in salary for the female partner. As one respondent put it:

> There's a tendency for colleagues and higher administrators to think of the academic couple as a unit rather than as individuals, i.e., he can't be promoted the year she receives tenure; if he gets a $2000 raise, she gets only $500. Moreover, these small discriminations are usually in the man's favor, although not always.

The final comment on being underpaid, although only representing one respondent, may reflect the rationalization chosen by other women in the face of salary discrepancies with their male colleagues.

> My lack of competitiveness has been the despair of my feminist friends but the secret of my contentment. It is true that I was always underpaid compared to males giving the same service, but even that had its compensations in rewarding personal relationships.

Discrimination in promotions. The comments on sex discrimination in promotions were usually reported autobiographically. Such data may cause the reader to raise the question of what other criteria besides sex might have been operative in the individual's case. Nevertheless, when one reads comment after comment telling of sex discrimination in promotion practices, the impression is that there must be a source for the complaints.

The following quotes, all from women, are representative of approximately 50 respondents who spoke directly to the question of discrimination in promotion.

> Looking back on the years of teaching and administration, I am well satisfied with my career and the work I did. However, I must admit that in the fifties and sixties, it was more difficult for a woman to achieve advancement within the department and the college. I did reach the associate professorship before retiring, however, I had to work harder, write more books, more articles etc. than many a male colleague during that period.
>
> . . .
>
> My rank (assoc.) 5 years after doctorate, looks good, but only if you overlook pre-doctoral experience and publications.
>
> . . .
>
> My career has been--and hopefully will continue to be--most satisfying. However, in spite of my good fortune in having my achievements recognized, the academic rewards have always lagged behind those granted to my male counterparts of equal or lesser ability. There is no doubt that it was difficult for a woman of my generation to reach the top of her field. In competition for raises in rank and salary, a woman although superior in terms of competance, productivity and performance, would generally be passed over in favor of a man.
>
> . . .

> I sometimes wonder when I see that the most routine pipe-puffers with whom I shared seminars have become department chairmen.
>
> . . .
>
> My present status as a member of a consulting group reflects my realization that a woman, no matter how competant, has no chance for a management position in the industrial chemical industry in this country. In this matter we have, in my opinion, regressed in the past 20 years. During W.W. II, when men were not available, women filled jobs that they cannot get now.

Anti-nepotism policies. Closely related to hiring, salary, and promotion practices was the problem for professional couples of anti-nepotism policies. Again, it was the female respondent who submitted the complaints telling of an employer, usually a university, who would refuse to promote, give salary increases, and in some cases, hire both members of a married team. A college professor who also has administrative duties summarized the responses on anti-nepotism in her comment:

> The major difficulty in terms of academic appointments for my husband and me at the same college or university has not been formal nepotism rules but informal ones--the idea, in the past openly and freely expressed--that only the husband should have a permanent or continuing appointment, that only the husband should be a full professor, that the wife should not have merit increases because of the husband's salary.

And a personal example from a 1950 graduate in education:

> For two years I was dean of a graduate school at less than an instructor's salary. I was told I was the best dean the College had had, but, of course, the position could not be permanent since I was a woman and since my husband was on the same college staff.

Discrimination in work tasks. Another area of discrimination reported by employed women was that of work loads and types of assignments. Twenty comments expressed situations in which women were expected to teach the classes or do work no one else wanted while male colleagues received the status assignments, and therefore the recognition. Perhaps because the commenters had experienced this type of discrimination first hand, there was under current of cynicism which is illustrated by the following two comments, both from women who received their degrees in 1968, the first a history professor and the second, a professor in education:

Male administrators take advantage of me through teaching loads and assignments. Anything is assigned to me and I can either accept it or not work. I hate my job, but am working because of necessity.

Women tend to receive assignments that men do not wish to have, e.g., those involving detailed investigation and planning or prolonged attention to specific jobs or programs. Men overlook women's needs for job satisfaction. Unless a woman is a real "pill" or nuisance, her needs and capabilities are thought of after those of men, many of whom may be inferior in intellectual achievement and ability as well as in ordinary human decency. If a woman complains, she is considered to be "bitching " as a result many of us put up with far more from dishonest, inept, or arrogant male colleagues than a peer male would ever accept.

Discrimination by colleagues. The final group of comments on sex discrimination was by far the most amorphous category. Here the respondent wrote of feelings of not being taken seriously by male colleagues. While this sense underlay many of the comments reported thus far on specific instances of discriminations, these few comments spoke directly of an awareness on the part of women of being second-class citizens in the professions. A 1960 graduate who is an associate professor in a four-year college wrote:

I am tired of continually having to prove myself to my colleagues. While I get along well with them I resent the fact that there are and were constraints on me simply because I am a female.

And from a 1950 Ph.D. recipient:

After securing a job, a host of subtle discriminations exist: condescension from male colleagues, lack of recognition for abilities, ...isolation in both social and professional contexts.

The Woman's Movement

The category [illegible]e Women's Movement, included the group of comments submitted by wor[illegible]ich spoke directly of their relationships to the feminist moveme[illegible]The number of comments (60) were only about one-sixth the size of the previous category on women doctorates' concerns and accounted for approximately 6 percent of the total comments reported

in this chapter. Again, it should be noted that question 19 in the questionnaire supplies more accurate information on the relationship of survey respondents to the women's movement. This summary simply reports what the respondents said voluntarily.

There was no single concensus of attitudes among the comments toward the women's movement. Some respondents were active participants, others applauded some aspects of the movement, while still others were displeased with the movement and wanted no part of it.

Involvements and Attitudes of Women Toward the Movement

Approximately one woman in five in this category reported active involvement in some aspect related to the women's movement. Since participation was most often expressed in attitude rather than membership in an organization, the "actively involved" were represented by this comment from a 1950 female graduate:

> I spend 100% of my time on matters related to women's rights since I am ever conscious of the fact that what I do and achieve will have influence on the opportunities for women who will follow me.

Women who saw themselves in a specific role were often members of a specific committee, such as this university professor:

> I have been actively involved in working with our administration (as chairman of a committee appointed by the administration) for equal employment of faculty and student women.

Another one in five respondents in this category reported partial involvement in women's rights activities. As a woman who received her Ph.D. in 1968 and teaches in a university put it:

> I do not belong to any organizations involved with women's rights..., however, I do consider myself involved with supporting these efforts on a personal basis.

This group of partial supporters was most often in favor of the profession-related aspects of the movement. A 1968 graduate wrote:

> I am for women's rights in employment--legal situations, etc.--but can't support some of the Women's Lib issues at all.

A few respondents indicated sympathy for the women's movement but said they were too busy to be involved. For example, this from a 1950 graduate:

> I would spend more time on women's rights, but as AAUP President at my institution for the last two years, I have had to concern myself with the rights of both men and women.

There were proportionately the same amount of anti-movement comments as supportive ones. Some respondents expressed a generally negative attitude toward the movement while others objected strongly to certain aspects.

A 1950 graduate who is now retired from college teaching wrote:

> I have very little sympathy with the females who bemoan their fate--they should do more and cry and shout less!

And from a 1968 Ph.D. recipient:

> I would support every person's rights and efforts to succeed on his own merits. To what ever extent I've come against sexual discrimination--it has been aggravated by the so-called "women's rights' movement. I used to be accepted as a person of professional capabilities. Now I have to "live down" every assertion made by, and stigmata produced by, the so-called women's rightist before my professional capabilities are considered.

No respondent was opposed to efforts to bring about equal pay for equal work. It was the more radical, political aspects of the feminist movement which were controversial in most cases. This from a 1950 graduate, a researcher in sociology:

> For something like 35-40 years I have supported and done what I could for equal employment opportunities for women (and everyone for that matter)...I am not, however, in sympathy with many of the current ideological overtones of women's lib, nor their stridency, tactics, psychological assaults on men, insistance on nonsense like Ms., chairperson, etc.

And on the subject of affirmative action programs, this comment from a 1968 graduate:

> As a women, I can only be grateful that present "affirmative action" programs have made it a little easier for persons like me to stay afloat in the general débâcle. But I cannot approve in principle the reverse discrimination in favor of women and minorities...

Personal Benefit from Movement

In addition to stating their positions on the women's movement, a few women were interested in reporting how they had personally benefitted from efforts to improve the lot of women. For example, from a 1950 graduate:

> Although I am now an associate professor (and will be a full professor next year I am told) it is only because of the women's lib movement which resulted in the University repealing its nepotism rule two years ago. Otherwise they would have let me be a research associate forever.

And finally, this comment for a woman in mid-career who stated the helpful effects of having one's consciousness raised:

> Looking back, the one thing I regret is never having learned anything about women. I would have made a vast difference in my professional life to have been aware of the facts as opposed to the mythology we are bombarded with.

Men's Comments Concerning Professional Women

The comments from men which were directly concerned with female professionals or the women's movement represented only about 5 percent of the total comments. The content was varied, and the attitudes of men toward their female colleagues ran the gamut of sympathy for the woman's plight to skepticism about their abilities and perseverance.

Hiring Women Professionals

On the subject of equal employment and the women's movement, the largest group of comments, approximately 20 men registered a position on the hiring of women. These comments fell equally into one of three descriptions--positive, grudgingly positive, and negative.

On the positive side, a man who received a Ph.D. in economics in 1950 wrote:

> Unfortunately, the women's "lib" movement is becoming effective at a time when jobs are becoming scarce. Some of the most accomplished "academics" are female, but the same universities that encourage their enrollment will refuse to employ them, or discriminate actively against them in recruitment and promotion.
>
> Why bother with a questionnaire of this type? Simply study the staff registers of the "best" schools and compare

them with their graduate--(male-female) ratios. I regret that I have been silent and passive and thereby acquiesced in much of this kind of anti-female discrimination.

And from a department chairman in a university:

> I'd like to see more women involved in all aspects of public life, including governance, and governance in higher education. As long as I'm a department chair, I'll attempt to recruit women into the program (Guidance and Counseling), sustain them through to successful completion, and support them in subsequent professional development. Women constitute the one major non-violent potential for redirecting and (à la John Gardner) self-renewal of our society. We men must not cast women in "our" image, as 'Prof. Higgins' did, or tried to do.

Another group of respondents were in favor of equal pay for equal work but were put off by other aspects of women's efforts for equality. A political science professor who received his degree in 1950 expressed the feeling of these respondents:

> I'm opposed to discrimination against women in employment and compensation; most of the other women's "rights" demands appear either ridiculous or stupid--and I fear, tend to alienate me. (If that's "male chauvinism", so be it.)

On the other hand there were male respondents who were generally opposed to the hiring of women. These writers felt that a woman's contribution, in most cases, was less than her male counterpart's.

A businessman stated:

> I don't agree with women's rights supporters that women in equal or equivalent positions as men contribute equally, even though they may be as qualified or more qualified technically or professionally. They have many minuses, namely emotional responses. The above is a general appraisal and there certainly are exceptions.
>
> Furthermore, because of the uncertain tenure of women in their positions, often because the position is not essential to family support, it is to an employer's disadvantage to invest in them through promotion, further job training etc. Such investment yields a greater return if made in men.

And a professor (who was unemployed at the time he returned the questionnaire) felt that women were not discriminated against in hiring:

> It is my experience (10+ years teaching) that women and other minorities are not discriminated against to any appreciable extent. It is also my experience that women and blacks (but not other minorities) simply do not have the aptitude (despite

certain exceptions) for higher math as frequently as others. The current drive to force universities to hire these minorities (by shading qualifications) is unscientific and unfair.

Granting Degrees to Women

In addition to negative attitudes about hiring women, a handful of comments reported skepticism about the desirability of granting graduate degrees to women. For example, this from a 1968 biology graduate:

> Granting a doctoral degree to women may well be wasted in lieu of her marrying and running a home. I do not feel this women's lib movement is changing this problem.
>
> Generally, the female graduate students I have encountered, four in four years, do not have the initiative or research desire for graduate work when compared to male students with equal or lesser GPA's.

The Women's Movement

The women's movement itself was something less than popular with the majority of men who commented on the subject. In addition to the former statements on equal employment, the following two quotes from male respondents:

> I am opposed to increasing women's rights only because I feel that the family and home will be a point of neglect. After child rearing years I heartily support such a concept. I find women associates most competent and able.
>
> . . .
>
> Many years of legislation to secure good labor regulations for women may be wasted by "women's lib."

However, the most typical comment, which represents not only the statements of some respondents but the underlying attitudes of others toward women's rights in the following by a 1960 graduate:

> I'm concerned with "rights" of all, both male and female--neither to the exclusion of the other.

or a 1950 graduate:

> Advancement in any professional field must be based solely on ability: sex or color are wholly irrelevant.

Support for Women Ph.D.'s Plight

Finally, several male respondents were very sympathetic with their female counterparts. Some reported active efforts to hire or advance women in their department or institution, and others were taking even more personal steps. A philosophy professor chose to defer to the profession of his wife in an employment move and wrote:

> My wife and I are currently employed at universities located 50 miles apart. We are moving to a new location next year primarily because it will enable us to teach in the same university (and same department). My wife will receive a substantially larger salary and remain at same rank; I will receive about the same salary as I now receive, but I will give up a name chair to hold rank of professor.

Graduate School Experience: General Comments

This section and the following on employment are concerned with the comments which pertained to personal experiences, observations, or dissatisfactions encountered as graduate students and later in various work situations. These comments are not related to being male or female, but are common, professional concerns shared by both sexes.

The comments about the graduate school experiences of the respondents accounted for about 10% of the total number of comments. The majority of them mentioned the irrelevancy of some or all aspects of graduate education or suggested specific program modifications. Others, approximately one in six respondents, wrote of their satisfaction with the experience itself and the intrinsic values of graduate school training. It should be kept in mind that the respondents in this study are all degree recipients. In order to obtain a complete picture of problems encountered in graduate work it would have been necessary to have surveyed students who had not been able to complete the degree.

The comments which fell in the category of graduate school experience were relatively few in number (approximately 100), and there was no over-riding consensus of opinion. Thus, the following quotes are examples of the personal criticisms expressed by the respondents.

Irrelevancies in Graduate Training

A few respondents talked about their own experiences with an overspecialized graduate program. A chemist who received her degree in 1950 wrote:

> I am disenchanted with narrow specialization! My doctoral work was a specialty within a specialty. I would now prefer an interdisciplinary application of physical chemistry--geochemistry.

Another respondent, a 1968 language major wrote about the gaps in her graduate training:

> Although I would not have changed my area of specialization, I feel there were so many gaps in my graduate education that at present I wish to study to fill those gaps.

And still another writer mentioned the problem of the "real" world, the world of work, compared to the graduate student's world.

I think you have overlooked the possibility of disillusionment with one's chosen field that comes with entering the big, real, working world after having been sheltered and nurtured in graduate departments during training.

And finally, two respondents criticized language requirements. Both felt that they were "absurd and anachronistic."

Suggestions for Modifications

Approximately one fifth (or 20) of the comments on graduate school contained suggestions for degree or training modifications. These ran the gamut of restricting admissions to cutting the length of the program. The following comments contain some of the more interesting suggestions and indicate the variety of concerns.

All doctoral programs should provide training and experience in teaching and research to about equal emphasis.

. . .

Many graduate programs continue to award degrees in fields where job opportunities are non-existent. These schools have a responsibility to inform the student of the correct data or prognosis for employment. The general society is amused at the ignorance (or arrogance) displayed in this domain and correctly regard such people as not-too-well-informed about life and reality.

. . .

Bring back entrance exams for all college education. Entrance based on qualifications not sex or color!!

. . .

Too strict admission policies in many areas discourages excellent students who could contribute to their fields clinically but are turned off by academic bureaucracy--too rigid graduate curricula.

. . .

I believe that the procedures used for the selection and qualification of doctoral degree candidates neither fosters, encourages, nor nourishes the curiosity of the divergent personality. Instead we have created a professional

> cadre of educators and researchers who work best in a highly structured environment consistent with their previous learning experiences. Does the Ph.D. degree today speak of an individual's creativity or does it simply signify competency in a technical skill?
>
> . . .
>
> Time spent for Ed.D. and Ph.D. too long! Program must be shortened! Degree not worth time spent.

Value of Graduate Training

Another small group of respondents commented on the value of graduate training. Some felt that the experience was secondary in importance to the job security which holding a Ph.D. granted to them. A 1950 graduate in the natural sciences wrote:

> Graduate study provided a means to an end, not the inspiration and pleasure I had previously assumed it to be.

Others, however, felt that the experience itself was of great value. This from a biochemist who graduated in 1968:

> ...the study was extremely rewarding in an intellectual sense. I think my graduate study years were among the most stimulating of my life.

And a physics professor wrote:

> Doing a thesis was an exciting experience--my first opportunity to exercise freedom, with guidance, in learning and discover my capacity for independent thought and creativity--a model of what education ought to be from elementary school on!

Graduate Faculty

About 20% of the graduate school comments mentioned the faculty as a significant factor. Approximately a third of these commenters wrote about the interest and encouragement they had received from a faculty member. A typical comment from a 1968 graduate:

> From my own experience as a doctoral student, I feel the most important single factor is the interest and guidance of the doctoral adviser. I was fortunate to have as my adviser an educator who took a professional interest and commitment to his candidate. This helped tremendously with the difficulties and burdens that inevitably develop during the study.

Another group of about the same size wrote of the lack of concern of faculty members in graduate school. Their comments were similar to this one submitted by a woman who received her degree in 1968:

> I feel very bitter about my graduate training because of lack of interest or genuine aid on the part of the faculty in facilitating my obtaining my degree. Nobody cared.

And, finally there was a small group, who reported bad experiences with their advisers or circumstances which affected their advisers. A library science graduate wrote:

> The faculty member who took the most interest in my work left after I had completed the M.A. The second one I worked for left after I started to work on a dissertation. The third faculty member left after I got my Ph.D.

And an anthropologist reported:

> The dissertation committee changed constantly and its members never seemed to agree with each other or, even to correspond with each other. Chaos!

Work Experience: General Comments

Approximately one in seven respondents commented on some aspect of their employment experience. For the most part these comments were negative, and the questionnaire comment page seemed to serve as a register for complaints. The comments represented both men and women, with women reporting almost twice as often as men.

Dissatisfactions in the Academic Setting

Approximately half the respondents' comments were related to their employment at an educational institution. The most frequent comment in this group had to do with the emphasis on research and

publications to the neglect of other activities. The problem was stated succinctly by a language professor:

> If one engages exclusively in teaching, then he has no time to keep up with the knowledge explosion. If one does only research, then he has little opportunity to pass on the results of his findings. The ideal situation is to do research, then pass on its results through teaching. Then both research and teaching are rewarding and meaningful.

This writer obviously was thinking of research from the pure motive of its contribution to knowledge. Other commenters complained about what they saw as the misuse of "research," that is, the over emphasis which universities place on numbers of publications as a means of rewarding their faculty. This, from a 1950 graduate:

> There is getting to be far too much emphasis on publications. University promotions, tenure, etc., tend to depend upon publications.

And from a 1968 doctoral recipient:

> Scholarly productivity should undoubtedly play an important role in terms of faculty promotion. However, I feel it to be grossly over-emphasized at the expense of the teaching and service roles at the university level. Furthermore, scholarly productivity is too narrowly limited to publishing in professional journals only.

Others felt caught in a bind of not having the time to do research because of other professional responsibilities. A biology professor wrote:

> My present employment is terminated as of 30 June 1973. Termination was ostensibly based on failure to produce publications. Many factors contributing to a relatively low "output" were not considered in the decision--including one of the duties for which I was hired in the first place--that of assuming the advisorship of [approximately 500] undergraduate majors.

Some commenters asserted that along with an overemphasis on research has come a devaluation of teaching. A 1968 graduate in speech wrote:

> Graduate institutions are becoming more clever at "appearances." They "appear" to be concerned about teaching, because they talk about that concern, but when it comes to the crunch of tenure, promotion, and salary decisions, teaching is virtually ignored.

Another type of concern voiced by respondents about their academic world described what they viewed as an increasing anti-intellectualism or an erosion of academic standards. These respondents, 15 in number, saw this as a recent phenomenon caused by the population explosion and the educational theory that everyone deserves an education. A 1960 graduate referred to the state university where she was employed as a "remedial university," and another respondent wrote this of doctoral candidates:

> As a faculty member, I am concerned over the degrading of doctoral standards. Many nonscholars are admitted and moved through on an assembly line. Original and creative thinking is at a premium.

A few respondents wrote of their unhappiness with their institutions' administrations. The remarks were similar to this from a 1960 graduate:

> In general this university is a good place to work....But the administration is strongly authoritarian, objects strongly to staff criticisms or suggestions, acts arbitrarily many times, usually avoids giving straight answers to honest questions, and in general is a pain in the ass.

Finally, there were the comments about being overworked and underpaid. It is interesting to note here that all the comments on being overworked were from women while the majority of comments on being underpaid were from men.

A 1960 literature major stated the typical complaint about being overworked:

> The reason for [my dissatisfaction] is simply that I have too much work to do, and the major reason, I'd say, for the overload is committee work--an average of 8-10 hours a week, much of it requiring preparation.

And on the subject of being underpaid, this from a 1950 graduate in chemistry:

> Renumeration for university teaching is simply not adequate to the skill, labor, and experience required.

Job Insecurity and Difficulty in Finding Jobs

More than a third of the people who commented in the category of Work Experience mentioned the lack of job security and the difficulty in finding jobs in the midst of the current job shortage. Most of these respondents were reporting their own situations. The following are examples of what was reported:

> The college at which I am teaching is in serious financial straits, and even now my future may be in jeopardy. If I lost this position, I may find it nearly impossible to obtain another within commuting distance.
>
> . . .
>
> In the present supply and demand situation of the academic world the prospects of satisfactory employment are poor indeed.
>
> . . .
>
> You just happen to have caught me between jobs after a massive layoff at my last place of employment. I have been out of work only 4 months and have failed to find employment chiefly because it would have to be at a high level to better my last post and this will take time to find.
>
> . . .
>
> I have tenure, but current fiscal situation makes job security questionable.

And, finally:

> I would tremendously appreciate any suggestion as to what I can do to find employment!

Other Employment Concerns

Interestingly, several respondents found their doctoral degrees to be a liability in their work. These people were obviously not employees of a university but held jobs in industry or with the government. One respondent, a 1968 graduate in engineering wrote:

> Although a doctorate is regarded as an esteemed and respected degree by industry in general, the status and prestige of the degree is not anything near or like that with the universities....Most times it is as if you never had any distinguished degree, since most people in contact fail to appreciate what it signifies or represents--also have bitter-sweet opinions about it--revere it yet suspect or fear it.

Another concern mentioned by several older respondents was that of being discriminated against, particularly in the area of hiring, because of their age. The women who commented on age discrimination outnumbered their male counterparts by three to one. A 1950 graduate, an education professor expressed the sentiments of this group when he wrote:

> Because of pension systems or whatever, I find that colleges will frequently take on a less experienced young man without my credentials (experience, publications, etc.). I see far more discrimination on the basis of age than of sex.

SOME CONCLUDING REMARKS

Since the questionnaire was particularly concerned with the woman doctorate, it came as no surprise that the comments from women outnumbered the ones from men by three to one. Nor was it unexpected that the women's comments dealt mainly with their particular professional concerns and role conflicts. Most men who commented about their female colleagues reflected an ambiguity of feelings. They were usually negative about the women's movement, and, in some cases, doubtful about the value of women entering the academic professions. On the other hand, many men were supportive of certain aspects (i.e., equal pay for equal work) and of particular women colleagues and situations.

From the perspective of having read and categorized over 1,000 comments, it must be said that such a magnitude of data is bound to produce some unexpected comparisons. One which comes to mind immediately is the comparison of comments from women who mentioned leaving the academic scene temporarily to produce or care for children and a proportionate number of comments from young men who reported interrupting their career for military service. Both groups were fulfilling societal obligations at approximately the same ages. Once the two groups return to their academic or professional endeavors, the male group was often rewarded with the GI bill and welcomed back. One suspects that the woman's situation

was less hopeful, since not only was she returning to a career where she was in the minority, but she also had to juggle child care and profession. The comments are replete with such comparisons some of which would seem worthy of further research.

Finally, it should be reiterated that reporting free responses in the manner of this section bears its own limitations. Not only were the comments voluntary on the part of the respondents, but by necessity, there had to be some selection in what was presented. An attempt to quantify and present an accurate balance of comments has been made. It is hoped that the product of these labors is a document of personal dimensions which takes seriously and presents accurately what a large group of people had to say about themselves and their unique experiences.